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CONTINUING "THE ELEMENTARY SCHOOL TEACHER"

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## EDUCATIONAL NEWS AND EDITORIAL COMMENT

**Denver School Election**

On May 7, Superintendent Carlos Cole won a signal victory for clean school organization in the city of Denver. Denver has for many years been a center of political upheavals in school matters. The Board of Education of that city has great powers; it is independent of the city government, levies its own taxes, and can make its own rules. It has been the practice of boards of education to interfere in school matters to such an extent that superintendents have found it impossible to organize a strong school system.

In 1915 Mr. Cole was called from Colorado Springs to the superintendency of Denver for the purpose of clearing up the school situation and taking the schools out of politics. The first act which the Board performed after electing Mr. Cole was to dismiss 150 teachers without consulting Mr. Cole. These teachers were dismissed on the pretext that they were inefficient, but in fact many of them were dismissed because of partisan reasons connected in large measure with religious questions. From the very beginning Mr. Cole took firmly the position that the teachers could not be legitimately dismissed for such reasons. He thereby antagonized from the outset two members of the Board, but was able to persuade the Board that their action had been injudicious, and the action was rescinded.

From that time on there has been the most vicious political controversy aimed at partisan control of the schools. For a time

it seemed as though a majority of the Board would be able to effect a good organization in spite of opposition, but just at the crucial moment one of the members of the Board died. This so divided the Board that they were not able to agree even on the filling of the vacancy in the Board. Almost everything that could be imagined in the way of political interference has been going on since that time.

Early this year the legislature of the state took a hand in the matter and increased the Board to seven members. This brought the matter to an issue on May 7, when the people of the city had an opportunity to vote for one man to fill the vacancy and for two new members of the Board. As a reply to this move on the part of the legislature the political group on the school board voted Mr. Cole out of office and attempted to put in his place one of the principals of an elementary school in the city.

At the May election three excellent men were elected members of the Board by a vote which indicated in no uncertain terms the temper of the people of Denver. The political coterie was absolutely snowed under. Mr. Cole was reinstated and once more the schools have the prospect of moving forward in a way that shall be advantageous for the citizens of Denver.

Through all this controversy Mr. Cole has had the support of school people all over the country. Without wavering, he has insisted on a clean school organization and has, by the force of his personality, secured it. The teachers have been enthusiastic about his administration because it has aimed at one end only—namely, the improvement of the work of the city system. He inaugurated an interesting experiment in the so-called opportunity school. He secured the support of the leading citizens and carried out with the aid of a number of students of education a thoroughgoing survey of the system and its needs. His reinstatement under the present conditions shows that in the long run a strong superintendent can win with an intelligent community. The example of Mr. Cole in Denver ought to encourage many a superintendent who is confronted by adverse conditions to realize that there is one and only one way for school men to meet political intrigue and to overcome the evil effects of interference with their work in the schools.

**Chicago School Politics**

On Monday, May 21, Mayor Thompson, of Chicago, sent to the City Council nine nominations to fill out the new School Board. The nominations were for the most part of persons whose only qualification for appointment seemed to be their probable willingness to obey orders from the political ring in control of the Mayor.

The next day President Loeb, of the old School Board, called a special meeting of that body and read a statement charging the Mayor with attempts to control the schools for purposes of patronage and purchase and lease of lands. This statement by President Loeb aroused a storm of public protest against the Mayor's nominations and served to bring the Board which has been bitterly torn by internal controversies into unanimous harmony.

The old Board h now taken the position that under the new law it has a right to organize, and to elect a superintendent of schools and a business manager each for four years. As one of the first fruits of repentance the Board has ousted a notoriously incompetent statistician who was appointed some time ago on the Mayor's request. The Board has appointed committees to recommend candidates for the superintendency and business managership.

Furthermore, two members of the present Board who were recommended by the Mayor for reappointment have withdrawn. Their withdrawal made it necessary for the Mayor to present two new names. This he did at a meeting of the City Council on June 4. He also attempted to answer President Loeb's charges and in turn charged the Board with wasteful and incompetent administration.

The City Council put over action on the whole list and also referred to the School Committee a resolution asking the Mayor to withdraw all nominations and begin over.

Chicago is a good example of democracy trying to save its school system from political vultures.

**Chicago Teachers' Federation**

Fast on the heels of the decision of the Supreme Court of Illinois that the Board of Education of the city of Chicago has a right to make a rule forbidding teachers to be members of a labor union comes the declaration that the Chicago Teachers' Federation has withdrawn from affiliation with the labor unions. With this announcement comes

the report that the Federation will devote itself, in a degree never before equaled, to the study of professional matters. This *Journal* believes that the Teachers' Federation is to be congratulated on the turn that history has taken. Out of this long-continued controversy there has come the possibility of developing a strong professional organization free from any of the suspicions which followed the older form of organization. Whether the Federation was lacking in past years in professional spirit, as its critics charged, is now a dead issue. The new Federation has cast off the load of unhappy affiliations and starts on a new career, unhampered and unafraid.

With the school system in a fair way to throw off city-hall politics and to start next year with intensive professional study of school problems on the part of teachers, Chicago has reason to be more hopeful than in many a long day of its school history.

**Iowa Bureau of Child Welfare**

For some years past the women's clubs and other organizations of the state of Iowa which are interested in child welfare have been acting under the leadership of Professor Carl Seashore, of the state university, in the effort to secure from the legislature funds for a bureau of research in the university which should deal with the whole matter of conservation of child life. This movement has finally succeeded. The last Iowa legislature appropriated $25,000 for the organization of such a bureau under the direct supervision of the graduate faculty of the state university. The appropriation is to be expended in the establishment of an experimental station at the state university. This will be a purely research institution. The work will begin this summer. At first attention will be concentrated on some two or three lines of research which will be selected as soon as the staff is formed. A committee is now at work on preliminary steps toward forming the organization provided by law.

In some respects the work of the station will be to do concerning human life what animal-husbandry experiment stations have long been doing concerning care of animals. It will investigate the conditions in Iowa that produce ill-born children and those that produce well-born children.

By experiments the best methods of feeding children to produce health and efficiency of the body will be worked out in the university hospital. The values of various foods, as well as their costs, will be determined.

Plans include an investigation of the causes of infant mortality, from which it is hoped that the public can be awakened to the merits of preventive measures of all kinds, not only in warding off disease, but also in aiding production of the superior body and mind.

The station will seek figures regarding births and deaths of infants and the maiming, stunting, dwarfing, reduction, and crippling of vitality of those who survive. Sanitation, housing conditions, food supplies, and working conditions of mothers as affecting child welfare will be studied.

The problems which this bureau has set for itself are in no wise duplicates of the problems which are taken up by departments of education or other institutions which are engaged in the training of teachers. This is essentially a problem of developing better methods of training children in the home before they come to the schools.

The experiment will be watched with great interest by the rest of the country, and undoubtedly the suggestion in this Iowa legislation will be fruitful in stimulating other states to undertake similar types of investigation.

**New York's School Law**

The legislature of New York has passed a new school law, which at the time of our going to press is in the governor's hands. For years the state has had in New York City and in the other municipalities a confused condition. New York City could hardly have anything else with a school board consisting of forty-six members. The friends of good organization have made gradual progress in educating the city and the state, until finally the new law has been enacted.

The statement sent by the New York Public Education Association to Governor Whitman advocating approval of the bill has in it so much that is significant for schools in all parts of the country that it ought to be quoted in full. Unfortunately the statement comes to hand so late that it cannot be put into the *Journal* as a

separate article; hence we must be content with a repetition of the following sections. The *Journal* is indebted to Mr. Nudd, secretary of the Association, for the statement.

Referring to the bill, the statement is as follows:

In support of these general points, the following data are respectfully submitted:

**Statement by the Public Education Association**

A. In Regard to New York City Specifically

I. *A small unpaid board of seven is provided for New York City.* This provision alone is epoch-making. It will make possible a businesslike administration as no other single provision could, because:

1. *Service on a small board is more attractive to capable men.*

The appointment to the Board of Education should be one of the highest honors that New York can bestow upon a citizen. The present Mayor of the city of New York on December 1, 1914, stated that it had proven difficult for him to make membership in a board of the present size sufficiently attractive to men and women of the stamp that should have charge of the educational system of this city.

2. *Responsibility for every decision can be easily fixed.*

The members of a small board soon learn to know each other and to avoid speech-making. The discussion on questions of importance is more public. The members of the board stand in the limelight. Their attitude is known and the responsibility for action definitely placed. The necessity for doing his part rests equally on each member. The board need not be divided up into committees in order that the work of business agents and of educational experts can be more readily understood, but can act as a whole on matters of important policy.

3. *The present large Board in New York City has proved to be inefficient.*

The Goodnow-Howe report to the Committee on School Inquiry of the Board of Estimate and Apportionment in 1913 summarized the weaknesses of the present unwieldy board of 46 in the following admirable manner:

"The Board of Education is too large, too unwieldy, a body. On this point all authorities seem agreed. As a result of its size and internal organization

(1) "The Board fails to awaken a proper sense of individual responsibility on the part of its members.

(2) "Authority is so widely distributed between the Board, its committees, and bureau heads that it is difficult, often impossible, to locate responsibility.

(3) "The size of the Board reduces its attractiveness to men sincerely desirous of public service, but deterred from accepting membership on the Board because of the lack of opportunity for efficient work."

This law was prepared by the state Department of Education after a thorough study of the statutes governing the several cities of the state, and as a result its provisions are phrased to meet adequately the needs of every community.

It is based on the sound assumption that education is a state rather than a municipal or local function, and yet recognizes the importance of guaranteeing to every community the widest measure of home rule in determining and carrying out the administrative details incident to enforcing the provisions of the general law.

In regard to New York City, with whose welfare the Public Education Association is particularly concerned, it has made possible three reforms which civic organizations and citizens interested in the welfare of the schools have long regarded as fundamental to the progress of education in this city:

It has reduced the size of the board of education from 46 to 7.

It has guaranteed to the schools a more adequate sum for annual operating expenses.

It has concentrated expert functions in the hands of experts, leaving to the Board of Education, as it should, the duty of formulating broad policies and seeing that things are done.

The New York City schools need a small board of directors which will deliberate and decide broad questions of policy rather than a large legislative body which will debate noisily and devote itself to minor administrative details. A small board is bound, by the very nature of the case, to slough off most of the petty activities at present performed by the Board of 46 and inaugurate an era of greater efficiency by seeing that those who are competent to do things and are charged with the responsibility do them.

(4) "The Board is not responsive to the public or to the elected officials who are finally responsible to the public for school administration.

(5) "There is inevitable conflict of jurisdiction between the different committees; there is a necessary overlapping of authority. A diplomatic courtesy has come to prevail under which each committee defers to the action of other committees. This has resulted in the creation of miniature boards of education within the Board of Education which in administrative matters are almost autonomous.

(6) "There is great waste in energy and ability. There is considerable waste in money for printing, for clerical assistance, etc.

(7) "Men of ability can make their influence felt only by indirection and by circumlocution. The work of the Board itself becomes routine, petty and detailed, rather than policy-making and legislative. In

addition much of the time of the superintendent of schools is consumed in administrative relations with the large number of committees, individuals, and bureau officials.

(8) "Most important of all, the size of the Board seems to have utterly defeated the main argument for its size. Members are not familiar with the whole school problem; they are familiar with only a fraction of the problem committed to the committees of which they are members. Neither the Board nor any committee of the Board is equipped to think or act as does the individual director of a city department; as does the Board of Estimate and Apportionment on city problems. Committee policies have been substituted for a comprehensive school policy. Aside from the instinct of men to amplify their departments and authority, the members of the Board have no means of becoming familiar with the school problem or with the schools as a whole. The size of the Board makes this impossible. The committee system accentuates the evil. The time of both the Board and its committees is absorbed with petty routine and administrative detail to the neglect of any large-visioned policies of school development. A voluntary school board as large as the Board of Education, meeting twice a month in short sessions, cannot, under the system which obtains, think or act as a policy-making, education-forming agency. That is out of the question. The only reason which justifies a board rather than a single administrative officer is destroyed by the very size of that board. And this cannot be otherwise with a voluntary, unpaid board of forty-six members.

"The substitution of a small board would, we believe, of itself correct the foregoing evils, as it has in Boston, Cleveland, and elsewhere where the small board obtains. Meeting as a unit, it would think in terms of the department rather than in terms of an individual committee. It would acquire a mastery not only of the educational, but also of the business, side of school administration. There would be an end of conflict, of particularism. Policies would be evolved as a matter of course, and the innumerable administrative details would be sloughed off by necessity."

4. *The success of the small board of education is indicated by the experience of the largest cities of the country and the well-nigh unanimous opinions of leading educators everywhere.*

The data on which this statement is based are summarized in the attached bulletins issued by the Public Education Association two years ago in support of a bill then before the legislature providing for a small board of education in the city of New York. This data supports the following propositions:

*a*) That New York City stands alone with its board of 46, three out of every four cities having boards of 9 or less, one out of two having boards of less than 7, and fourteen having the most common size, 5.

*b*) That there is a distinct tendency toward the small board of education, twenty-seven out of thirty-four cities having materially reduced the size of their boards in the last few years.

*c*) That the size of the city has not determined the size of boards elsewhere, and therefore should not do so in New York City.

*d*) Unpaid boards are the rule in the large cities of this country.

*e*) Small boards are, with a few exceptions, unpaid and do not tend to become paid, which answers the criticism of many of those who oppose the reduction of the present board in New York.

II. *The powers of the Board of Education in New York City are wisely confined to formulating policies and seeing that things are done.*

One of the strongest features of the State Education bill is its concentration of responsibility for expert functions in the hands of experts.

In support of its contention that the present Board is concerning itself with innumerable administrative details which should be sloughed off and delegated to expert employees, the Goodnow-Howe report analyzes the activities of the Board in great detail and concludes that *only 6 per cent of the present powers exercised by the Board should be properly exercised by the Board as a whole. The remaining 94 per cent should be delegated to subordinate officials.* This is a telling reply to those who contend that a board of 7 cannot do the work of a board of 46. The answer is, it should not. It should confine its work to general policies and concentrate responsibility for expert administrative functions in the hands of experts.

**Modern Education in China**

Professor Breed, of the University of Michigan, sends the following letter from one of his Chinese students to show what is going on by way of modern educational undertakings in China:

You will wonder what has become of me since I wrote you last. According to ordinance of the Board of Education in Peking, all the provincial normal colleges have been discontinued this year and five national normal colleges have been established in their place. Therefore, after the last class graduated in Chinan Normal College, that school was closed and I came to this place. A Michigan graduate here, now principal of the Commercial College, recommended me to the Educational Bureau of the city as a sort of adviser. Since I came, during the last part of October, 1916, we have been trying to accomplish a few things. Let me enumerate them to you. At present we are undertaking to make a Chinese writing standard something like that of Thorndike's.

We have given out uniform writing papers to twenty or more elementary schools in the city. When these come in, as they now are coming every day, we hope to collect 2,000 handwritings, counting out those which are not clear in giving names, ages, grades, or are otherwise unsuitable for use. I am now trying to get the names of 50 or more well-known penmen to judge them, dividing them into 14 or 15 grades. When we are through with this we will then look into the high-school writing. What we plan to do is to see how long it will really take to write Chinese well and determine the best school years for accomplishing this. Chinese writing is very hard to perform and in certain respects is quite a different problem from the English. When this is accomplished I shall send a copy to you.

Another thing we have done is to establish an educational translation department to render into Chinese the leading educational books. For some political reason the politicians have pounced upon the job and we have lost control of it. Still, if there is a chance, we will try our best to help. For the next best thing we are now publishing an educational monthly, the *Hunan Educational Monthly Magazine*. Through this we hope to give educational information and translations of educational books. What do you say if I tell you that I am teaching Ruediger's *Principles of Education* in Chinese? The first four chapters are already printed, ready for the students to use in the spring. Perry's *Outlines of School Administration* has already been turned into Chinese. After I go over it once more, the Educational Bureau will publish it on its own account. Colvin's *Learning Process* is harder to manage, and it will take another year before I can show it to anybody.

If there is no political upheaval this year, we shall plan for an educational museum and a psychological laboratory in connection with some of the schools in the city. What apparatus do you think we can buy with $500.00, for that is all we can hope to appropriate for the purpose this year?

**Controlling the Ethics of Teachers' Agencies**

The teachers' agencies of the United States have organized into a national association and have adopted a code of ethics which shows that they are desirous of establishing a better system of practice in the matter of appointing teachers. The president of the association, Mr. Willard N. Parker of Madison, Wisconsin, is anxious to enforce as fully as possible the code of ethics adopted by this association. In a recent circular letter which he has issued, the following paragraphs occur:

A complaint has just been filed with this organization against a teachers' agency which had deliberately sold to candidates the confidential credentials sent them by a western university. The agency in question is not a member

of the National Association of Teachers' Agencies. If it were, it would be subject to the most rigid discipline.

The object of this letter is to request the officers of appointment committees in colleges and universities to report to the officers of this organization promptly any breaches of professional ethics, or any unprofessional or unbusiness-like conduct on the part of any agency.

This letter is quoted with a view to calling the attention of teachers to the desirability of reporting to Mr. Parker any practices which in their judgment indicate that the teachers' agencies are not proceeding in an ethical fashion. Since these agencies exercise a very large influence at the present time in the appointment of teachers, it is desirable that there should be professional co-operation in rendering the work of the better agencies more effective and in making it impossible for agencies that practice irregular methods to flourish in any part of the country.

# AN INVESTIGATION OF THE WRITING VOCABULARIES OF REPRESENTATIVES OF AN ECONOMIC CLASS

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Several investigations have been made of the writing vocabularies of adults, the best known probably being those of Ayres[1] and of Cook and O'Shea.[2] That such endeavor is a fundamental necessity in the attack upon the problem of spelling in the schools is hardly to be doubted. That more of this sort of work needs to be done before we can feel assured of success in meeting this problem or can speak with authority about this important factor of it seems evident also.

Dr. Ayres based his investigation upon 2,000 miscellaneous business and personal letters secured from a large number of sources; Professors Cook and O'Shea confined their effort to the tabulation of the personal correspondence of thirteen individuals. To a certain degree the first investigation was extensive, the latter intensive. In the Ayres study no mention is made as to how widely separated were the localities of the correspondents, nor is it explained whether there were more than one letter from any one writer in the list. The purpose of the Cook and O'Shea list was "to study individual needs rather than to secure a composite of the vocabularies of many persons," and therefore only the letters of a small number of persons were dealt with. In regard to the localities of the correspondents in this list, it would seem that there was rather a wide distribution.

The question of special interests dictating the use of words in letters forming the basis of such investigations is important and so far not entirely solved by figures showing the frequency of occurrence of words. The location, vocation, education, and age

[1] *The Spelling Vocabularies of Personal and Business Letters.* Bulletin E126, Russell Sage Foundation.

[2] *The Child and His Spelling.* Bobbs-Merrill, 1914.

of correspondents are all special factors of large weight, and we have no principles or standards by which to be guided in the selection of material. Nor will mere volume of correspondence examined, if unwisely or unfairly selected, yield a true basic vocabulary and so provide us with a minimum number of words for spelling instruction.

The various investigations that have been carried on to determine the number of words in the writing vocabularies of children and adults have done one thing definitely and well. They have shown with great clearness that ordinary writing needs can be satisfied with a much smaller number of words than was ever supposed, and they have completely discountenanced the dictionary type of spelling text with its ten to twenty thousand or more words, the attempt to teach which has indeed made spelling a grind. These investigations have also made decidedly evident the distinction between reading, writing, and speaking vocabularies, a distinction which the authors of some spelling texts have evidently not had in mind.

The following study was undertaken in a belief that an investigation of the writing needs of representatives of an economic class might possibly suggest a central factor around which some studies of adult writing vocabularies could profitably be conducted. It is possible that more investigations of this kind, conducted upon a sufficiently extensive basis, will clearly reveal the most essential writing needs of the adult population. With the results of a number of such studies known, checking and comparison might reveal what words were used to express special meanings due to industrial, economic, or vocational interests in each case. The remaining words might then deserve to be called representative of the writing needs of *all* classes, and therefore form a writing vocabulary sufficiently basic to be taught in its entirety in the elementary schools.

The material for this study was furnished by letters written by California farmers to the Department of Agriculture of the University of California.[1] The intention was at first to examine letters written by farmers to that department, which has charge

[1] The author desires to express his appreciation of the courtesy of Dean Hunt of this department in permitting and facilitating this investigation.

of extension courses in agriculture, but it was found that these letters were more or less stereotyped in character, being for the most part inquiries regarding the nature of courses, fees, etc., and therefore not including a sufficiently wide range of words.

The letters which were finally selected were written upon a very wide range of subjects pertaining to the interests of farmers, and included a considerable percentage of letters from women. That the letters were not artificial or stereotyped will probably be realized when the fundamental interests under discussion are considered. The work of this department of the University of California is well known throughout the state, and advantage of it is taken by all sorts and conditions of agriculturalists.

These letters did not appear to be letters from only a writing class of farmers. They did appear to be letters from farmers who were seeking expert aid, but many things seemed to indicate that there was a great diversity of material prosperity, education, and intelligence represented among the writers. And as farmers as a rule do not dictate their letters to stenographers, it cannot be said that it was the product of a professional writing class that was examined.

Here would seem to be a situation in which writing is generally necessary. In view of the assertion that writing (and therefore spelling) is declining in importance as social progress makes written communication more and more unnecessary, the question may be raised whether situations of this sort are not becoming general enough to offset somewhat the other factors. The growing tendency on the part of people directly to consult (in writing) governmental and other official and semiofficial departments and bureaus established to give expert advice is a marked one. The large growth of instruction by correspondence may also be a case in point.

In this study 750 letters were examined. Seventy-five letters were taken from each section of a large filing-case indexed from *A* to *J* inclusive. There were approximately 65,500 words in these letters, or an average of about 87 words to a letter.

The first and last words in each line of the body were tabulated, formal salutations and conclusions being disregarded. In all,

18,701 words were tabulated. Following this plan the words of 700 letters were at first carefully tabulated. Then 50 additional letters were put through the same process. It was found that, although percentages of occurrence were thus not greatly changed, a few new common and non-technical words were added. An examination was then made of another 50 letters, with the result that no new common words were added, the only additions being words of a strictly technical character. None of these latter, moreover, occurred more than once. The result of this last examination of 50 letters was therefore not included in the final tabulation.

In compilation of these data inflected forms requiring an essentially different spelling from that of the root words were listed as different words, principally for the reason that, as problems in spelling, they are distinct. Their frequency of occurrence is also different from that of the root words, and it is conceivable that this may be significant. The sole exception was in the case of the change of *y* to *ies* to form the plural. Where the inflected forms differed from the root words only in the addition of, for instance, an *s*, an *ing* or an *ed*, their frequency was combined with that of the root words. Where special forms, such as plurals or past tenses, alone occurred in the letters, they were so listed unchanged. Words of the same spelling and pronunciation but with different meanings were listed together.

As a result of this tabulation of 18,701 words from letters containing approximately 65,500 words, there were found 1,869 different words. Of these, 816 words were used but once, 1,053 being used two or more times.

Table I shows the frequency of appearance of the words. The first column shows the number of appearances of the words, the second the number of words which appeared within the ranges indicated in the first column.

The extensive range of the appearances of the words will at once be marked. At one extreme were the words "I" and "the," occurring 841 and 825 times, respectively; at the other extreme were the 816 words which occurred but once. The 10 commonest words furnished slightly more than one-fourth of the total number

of appearances, 47 words one-half the appearances, and 493, seven-eighths.

TABLE I

FREQUENCY OF APPEARANCE OF WORDS

| Appearances | No. of Words | Appearances | No. of Words |
|---|---|---|---|
| 600–899 | 2 | 10– 19 | 138 |
| 500–599 | 2 | 9 | 25 |
| 400–499 | 1 | 8 | 43 |
| 300–399 | 2 | 7 | 48 |
| 200–299 | 6 | 6 | 39 |
| 100–199 | 20 | 5 | 74 |
| 90– 99 | 4 | 4 | 105 |
| 80– 89 | 5 | 3 | 156 |
| 70– 79 | 11 | 2 | 271 |
| 60– 69 | 2 | 1 | 816 |
| 50– 59 | 12 | | |
| 40– 49 | 10 | Total number of words | 1,869 |
| 30– 39 | 24 | Total appearances | 18,701 |
| 20– 29 | 53 | | |

These results are in striking agreement with those of Dr. Ayres's study. Table II compares the two, following Ayres's arrangement of the appearances of his words by eighths:

TABLE II

COMPARISON OF APPEARANCES OF SEPARATE WORDS IN AYRES'S AND FARMERS' LISTS

| | Ayres | | Farmers | |
|---|---|---|---|---|
| | No. of Words | Total No. of Appearances | No. of Words | Total No. of Appearances |
| One-eighth | 3 | 2,954 | 3 | 2,263 |
| One-fourth | 9 | 5,907 | 10 | 4,785 |
| Three-eighths | 21 | 8,861 | 23 | 7,014 |
| One-half | 43 | 11,815 | 47 | 9,322 |
| Five-eighths | 99 | 14,768 | 97 | 11,695 |
| Three-fourths | 226 | 17,721 | 212 | 14,028 |
| Seven-eighths | 542 | 20,675 | 493 | 16,365 |
| Eight-eighths | 2,001 | 23,029 | 1,869 | 18,701 |

Table III shows the relation between the first ninety-seven words in this list and the same words in the Ayres and the first Cook and O'Shea lists. Ninety-seven words are chosen because these words, with their aggregate number of appearances, constituted five-eighths of all the words tabulated for this investigation.

TABLE III

COMPARISON OF PERCENTAGES OF FREQUENCY OF OCCURRENCE OF WORDS IN AYRES, COOK AND O'SHEA, AND FARMERS' LISTS

| Word | Ayres | Cook-O'Shea | Farmers | Word | Ayres | Cook-O'Shea | Farmers |
|---|---|---|---|---|---|---|---|
| I | 4.57 | * | 4.49 | from | 0.45 | 0.44 | 0.39 |
| the | 3.88 | 3.8 | 4.41 | give | 0.13 | 0.15 | 0.379 |
| and | 2.94 | 4.12 | 3.19 | alfalfa | ..... | ..... | 0.37 |
| to | 2.65 | 3.77 | 3.14 | your | 2.47 | 0.55 | 0.37 |
| of | 2.16 | 1.62 | 2.59 | but | 0.45 | 0.88 | 0.36 |
| you | 2.68 | 2.04 | 1.83 | crop | ..... | ..... | 0.35 |
| in | 1.35 | 1.25 | 1.78 | been | 0.22 | ..... | 0.31 |
| a | 1.31 | * | 1.48 | fruit | ..... | ..... | 0.30 |
| have | 0.91 | 2.88 | 1.37 | has | 0.27 | ..... | 0.30 |
| me | 0.86 | 0.68 | 1.34 | their | 0.06 | 0.10 | 0.30 |
| for | 1.75 | 1.13 | 1.29 | very | 1.04 | 0.32 | 0.29 |
| it | 0.83 | 1.80 | 1.13 | best | 0.06 | ..... | 0.29 |
| is | 0.60 | ..... | 1.12 | so | 0.34 | 0.86 | 0.29 |
| on | 0.63 | 0.58 | 1.05 | year | 0.17 | 0.12 | 0.29 |
| information | 0.09 | ..... | 0.97 | use | 0.09 | 0.08 | 0.28 |
| will | 1.25 | 1.52 | 0.95 | get | 0.15 | 0.83 | 0.28 |
| what | 0.22 | 0.23 | 0.87 | good | 0.20 | 0.41 | 0.27 |
| that | 0.87 | 1.25 | 0.81 | where | 0.10 | 0.68 | 0.27 |
| if | 0.65 | 0.52 | 0.79 | bulletin | ..... | ..... | 0.26 |
| as | 1.02 | 0.68 | 0.78 | same | 0.10 | 0.05 | 0.26 |
| be | 0.62 | 4.85† | 0.76 | seed | ..... | ..... | 0.26 |
| any | 0.31 | 0.26 | 0.69 | advise | ..... | ..... | 0.26 |
| can | 0.32 | 0.59 | 0.68 | culture | ..... | ..... | 0.26 |
| raise | ..... | ..... | 0.679 | kind | 0.08 | ..... | 0.25 |
| some | 0.26 | 0.37 | 0.67 | one | 0.42 | 0.55 | 0.25 |
| please | 0.79 | ..... | 0.64 | by | 0.42 | 0.21 | 0.24 |
| send | 0.74 | ..... | 0.62 | may | 0.22 | ..... | 0.21 |
| with | 1.07 | 0.65 | 0.60 | out | 0.11 | 0.10 | 0.21 |
| plant | ..... | ..... | 0.59 | all | 0.17 | 0.68 | 0.21 |
| also | 0.19 | 0.08 | 0.58 | much | 0.12 | 0.47 | 0.21 |
| this | 0.72 | 0.61 | 0.58 | orchard | ..... | ..... | 0.21 |
| soil | ..... | ..... | 0.54 | should | 0.16 | ..... | 0.21 |
| are | 0.43 | ..... | 0.539 | California | ..... | ..... | 0.20 |
| at | 0.58 | 0.62 | 0.51 | when | 0.22 | 0.38 | 0.20 |
| about | 0.19 | 0.44 | 0.49 | regarding | ..... | ..... | 0.197 |
| which | 0.60 | 0.12 | 0.49 | walnut | ..... | ..... | 0.19 |
| my | 1.09 | 0.72 | 0.47 | water | ..... | ..... | 0.19 |
| grow | ..... | ..... | 0.47 | growers | ..... | ..... | 0.187 |
| land | 0.02 | ..... | 0.47 | tell | 0.11 | 0.33 | 0.187 |
| how | 0.07 | 0.21 | 0.45 | other | 0.18 | 0.17 | 0.18 |
| do | 0.22 | 1.24 | 0.44 | an | 0.20 | 0.17 | 0.17 |
| them | 0.22 | 0.31 | 0.438 | literature | ..... | ..... | 0.17 |
| know | 0.22 | 0.39 | 0.42 | want | 0.12 | 0.27 | 0.17 |
| am | 0.27 | ..... | 0.41 | was | 0.33 | ..... | 0.17 |
| like | 0.15 | 0.27 | 0.406 | state | 0.08 | ..... | 0.17 |
| not | 0.52 | 1.43 | 0.40 | hogs | ..... | ..... | 0.16 |
| kindly | 0.24 | ..... | 0.40 | plants | ..... | ..... | 0.16 |
| they | 0.20 | 0.46 | 0.39 | ranch | ..... | ..... | 0.16 |
| acre | ..... | ..... | 0.395 | | | | |

*Not tabulated by Cook and O'Shea.

†All forms of "be" included here.

The figures are to be read as percentages and represent the relation between the number of times each word appeared in its list and the total number of appearances of all words in that list.

The distinctive character of this list will probably be evident after but a cursory examination. It will be seen, in the first place, that words of an intimate or personal character are either few in number or missing altogether. "Truly," "dear," "sincerely," "love," etc., do not occur. (It must be recalled that formal salutations and conclusions were not tabulated.) This characterizes to a large extent the nature of the letters and the purpose of the writers. The high frequency of interrogative words, such as "information," for instance, is only to be expected here.

Inspection of Table III will show how this sort of comparison of lists reveals the relative importance of words in adult writing vocabularies. More extended investigations accompanied by careful and complete checking and by comparisons such as that given in the table ought to indicate definitely what words are necessary to express meanings indicative of special interests only. Table III shows that such words as "raise," "plant," "soil," "grow," "acre," "crop," "fruit," "alfalfa," "bulletin," "seed," "culture," "orchard," etc., are all of this sort. Not only are many of the words, even those with a high frequency, peculiar to agricultural interests, but a considerable number are peculiar to the Far West. The word "rancher" is a case in point.

To obtain a list of the words representative of the writing needs of the agricultural class throughout the United States would require several investigations conducted in widely separated and typical localities. But it would probably be found that there would be more variation among words with a technical or special significance than among others. In the present list these words will be found to be words of a comparatively low frequency of occurrence, many of them not appearing in the part of the list printed, because they were found to occur but once.

As is to be expected, a similar comparison of words in these three lists whose frequency of occurrence is lower than that of the words in Table III shows a greater variation between the percentages of the same words in the three lists and a larger number

TABLE IV

WORDS OF THE FARMERS' LIST OCCURRING FIVE OR MORE TIMES, ARRANGED IN DESCENDING ORDER OF FREQUENCY OF APPEARANCE

| | | | | | |
|---|---|---|---|---|---|
| I | 841 | but | 68 | *ground* | 28 |
| the | 825 | *crop* | 65 | *irrigate* | 28 |
| and | 597 | been | 59 | *poultry* | 28 |
| to | 587 | *fruit* | 56 | these | 28 |
| of | 486 | has | 56 | here | 27 |
| you | 342 | their | 56 | last | 27 |
| in | 324 | very | 55 | *samples* | 27 |
| a | 277 | best | 54 | subject | 27 |
| have | 256 | so | 54 | take | 27 |
| me | 250 | year | 54 | *cactus* | 25 |
| for | 243 | use | 53 | had | 25 |
| it | 212 | get | 52 | inform | 25 |
| is | 209 | good | 50 | let | 25 |
| on | 197 | where | 50 | receive | 25 |
| information | 182 | *bulletin* | 49 | small | 25 |
| will | 178 | same | 49 | *dry* | 24 |
| what | 162 | *seed* | 49 | *farm* | 24 |
| that | 151 | *advise* | 48 | interest | 24 |
| if | 149 | *culture* | 47 | *pears* | 24 |
| as | 147 | kind | 46 | *prune* | 24 |
| be | 143 | one | 46 | possible | 24 |
| any | 129 | by | 44 | *stock* | 24 |
| can | 128 | may | 41 | think | 24 |
| *raise* | 127 | out | 40 | up | 24 |
| some | 126 | all | 39 | enclose | 23 |
| please | 119 | much | 39 | our | 23 |
| send | 114 | *orchard* | 39 | *peaches* | 23 |
| with | 112 | should | 39 | such | 23 |
| *plant** | 111 | *California* | 38 | time | 23 |
| also | 109 | when | 38 | *vegetable* | 23 |
| this | 109 | regarding | 37 | appreciate | 22 |
| *soil* | 101 | *walnut* | 36 | *cattle* | 22 |
| are | 100 | *water* | 36 | *grew* | 22 |
| at | 96 | *grower* | 35 | now | 22 |
| about | 92 | tell | 35 | *potatoes* | 22 |
| which | 92 | other | 34 | regard | 22 |
| my | 90 | an | 33 | *almonds* | 21 |
| *grow* | 89 | *literature* | 33 | *conditions* | 21 |
| *land* | 88 | want | 33 | *departments* | 21 |
| how | 84 | was | 33 | *fertilizers* | 21 |
| do | 83 | state | 32 | old | 21 |
| them | 82 | *hogs* | 31 | *orange* | 21 |
| know | 79 | *plants*† | 31 | *proper* | 21 |
| am | 78 | *ranch* | 31 | put | 21 |
| like | 76 | *feed* | 30 | *concerning* | 20 |
| kindly | 75 | *spray* | 30 | go | 20 |
| not | 75 | *variety* | 30 | *leaves* | 20 |
| they | 74 | wish | 30 | *value* | 20 |
| *acre* | 73 | *beans* | 29 | help | 19 |
| from | 72 | *irrigation* | 29 | find | 19 |
| give | 71 | *olives* | 29 | places | 19 |
| *alfalfa* | 70 | too | 29 | *sandy* | 19 |
| your | 70 | well | 29 | work | 19 |

*Verb. †Noun.

TABLE IV—*Continued*

| | | | | | |
|---|---|---|---|---|---|
| *circulars* | 18 | before | 13 | *fertilize* | 10 |
| *fall* | 18 | *care* | 13 | follow | 10 |
| *loam* | 18 | *eat* | 13 | four | 10 |
| *market* | 18 | expect | 13 | *full* | 10 |
| seem | 18 | *flowers* | 13 | great | 10 |
| soon | 18 | *food* | 13 | *grapes* | 10 |
| *spring* | 18 | *formula* | 13 | *having* | 10 |
| summer | 18 | *into* | 13 | *insects* | 10 |
| were | 18 | *kill* | 13 | late | 10 |
| *advance* | 17 | matter | 13 | *lemon* | 10 |
| come | 17 | most | 13 | meeting | 10 |
| *figs* | 17 | need | 13 | new | 10 |
| *garden* | 17 | *program* | 13 | only | 10 |
| *graft* | 17 | *result* | 13 | *purpose* | 10 |
| little | 17 | several | 13 | *seasons* | 10 |
| off | 17 | three | 13 | suggest | 10 |
| questions | 17 | *tobacco* | 13 | things | 10 |
| *sections* | 17 | whether | 13 | *vines* | 10 |
| *agriculture* | 17 | *worms* | 13 | *winter* | 10 |
| *analysis* | 17 | after | 12 | *cut* | 9 |
| *bugs* | 17 | *apricot* | 12 | desire | 9 |
| *chickens* | 17 | *being* | 12 | early | 9 |
| *destroy* | 17 | book | 12 | enough | 9 |
| *grain* | 17 | *dairy* | 12 | *following* | 9 |
| *grass* | 17 | *data* | 12 | found | 9 |
| *plow* | 17 | did | 12 | *heavy* | 9 |
| *roots* | 17 | great | 12 | *high* | 9 |
| trouble | 16 | *growth* | 12 | keep | 9 |
| then | 16 | *milk* | 12 | *lettuce* | 9 |
| without | 16 | *prepare* | 12 | *lots* | 9 |
| *apples* | 15 | *purchase* | 12 | *lye* | 9 |
| *bear* | 15 | *suitable* | 12 | months | 9 |
| call | 15 | too | 12 | next | 9 |
| especially | 15 | *young* | 12 | nothing | 9 |
| few | 15 | *available* | 11 | *pests* | 9 |
| *inches* | 15 | *climate* | 11 | *rainfall* | 9 |
| *methods* | 15 | large | 11 | *run* | 9 |
| *near* | 15 | *lines* | 11 | something | 9 |
| shall | 15 | *miles* | 11 | *spineless* | 9 |
| start | 15 | many | 11 | *squirrels* | 9 |
| us | 15 | *moisture* | 11 | their | 9 |
| *wheat* | 15 | more | 11 | try | 9 |
| write | 15 | name | 11 | *university* | 9 |
| *above* | 14 | necessary | 11 | *yet* | 9 |
| *adapted* | 14 | part | 11 | *agricultural* | 8 |
| *barley* | 14 | right | 11 | *along* | 8 |
| business | 14 | say | 11 | *apply* | 8 |
| does | 14 | *scale* | 11 | believe | 8 |
| *generally* | 14 | *station* | 11 | both | 8 |
| *greatly* | 14 | so | 11 | *bud* | 8 |
| just | 14 | we | 11 | *build* | 8 |
| *might* | 14 | who | 11 | *buttons* | 8 |
| make | 14 | better | 10 | *charge* | 8 |
| obtain | 14 | *blight* | 10 | city | 8 |
| *able* | 13 | cause | 10 | *color* | 8 |
| *analyze* | 13 | *cultivate* | 10 | *commercial* | 8 |
| *around* | 13 | *effect* | 10 | contain | 8 |

TABLE IV—*Continued*

| | | | | | |
|---|---|---|---|---|---|
| *damage* | 8 | *mostly* | 7 | *tomatoes* | 6 |
| *disease* | 8 | must | 7 | *valley* | 6 |
| done | 8 | *onions* | 7 | *vineyard* | 6 |
| don't | 8 | pamphlets | 7 | account | 5 |
| down | 8 | particular | 7 | *almost* | 5 |
| *eggs* | 8 | *peas* | 7 | *ants* | 5 |
| either | 8 | *produce* | 7 | *assist* | 5 |
| *feet* | 8 | *quantity* | 7 | *attack* | 5 |
| *fields* | 8 | *rabbits* | 7 | *average* | 5 |
| *got* | 8 | recommend | 7 | *bacteria* | 5 |
| *government* | 8 | red | 7 | *blossoms* | 5 |
| *light* | 8 | reference | 7 | *butter-fat* | 5 |
| *lime* | 8 | *river* | 7 | *cheese-cloth* | 5 |
| *location* | 8 | set | 7 | *chemical* | 5 |
| never | 8 | *specimens* | 7 | *citrus* | 5 |
| know | 8 | *ten* | 7 | *complete* | 5 |
| *nursery* | 8 | than | 7 | consider | 5 |
| *opinions* | 8 | they | 7 | *cucumbers* | 5 |
| *prices* | 8 | until | 7 | distribute | 5 |
| *quiet* | 8 | weeks | 7 | *ditches* | 5 |
| *rid* | 8 | *wood* | 7 | *east* | 5 |
| sent | 8 | *amount* | 6 | *etc* | 5 |
| separate | 8 | *anxious* | 6 | *every* | 5 |
| success | 8 | back | 6 | *family* | 5 |
| *successful* | 8 | *benefits* | 6 | favor | 5 |
| *told* | 8 | *berry* | 6 | *fly* | 5 |
| *tract* | 8 | *blackberries* | 6 | *forage* | 5 |
| *treat* | 8 | *branches* | 6 | *furnish* | 5 |
| *vicinity* | 8 | *brown* | 6 | *future* | 5 |
| white | 8 | *Burbank* | 6 | *gophers* | 5 |
| *advice* | 7 | buy | 6 | *grapevines* | 5 |
| *already* | 7 | *distribution* | 6 | *gain* | 5 |
| *appeared* | 7 | *extent* | 6 | half | 5 |
| *asparagus* | 7 | first | 6 | *head* | 5 |
| *bought* | 7 | *granite* | 6 | *healthy* | 5 |
| become | 7 | *grove* | 6 | *hills* | 5 |
| *bloom* | 7 | hand | 6 | him | 5 |
| *considerable* | 7 | heard | 6 | home | 5 |
| *deal* | 7 | *homestead* | 6 | *idea* | 5 |
| *decomposed* | 7 | house | 6 | *industry* | 5 |
| *deep* | 7 | however | 6 | letter | 5 |
| *die* | 7 | mentioned | 6 | *level* | 5 |
| *drop* | 7 | note | 6 | *live* | 5 |
| each | 7 | *oats* | 6 | made | 5 |
| *composed* | 7 | offer | 6 | *making* | 5 |
| *eucalyptus* | 7 | open | 6 | order | 5 |
| *experiment* | 7 | pay | 6 | *own* | 5 |
| fine | 7 | *preparation* | 6 | *patch* | 5 |
| form | 7 | present | 6 | *pepper* | 5 |
| *free* | 7 | probably | 6 | persons | 5 |
| *gardening* | 7 | *profitable* | 6 | *pick* | 5 |
| *goats* | 7 | read | 6 | *piece* | 5 |
| *infected* | 7 | school | 6 | placed | 5 |
| issue | 7 | supply | 6 | plan | 5 |
| list | 7 | *surface* | 6 | *plum* | 5 |
| *loose* | 7 | *test* | 6 | *poison* | 5 |
| *melons* | 7 | those | 6 | practical | 5 |

TABLE IV—*Continued*

| | | | | | |
|---|---|---|---|---|---|
| print | 5 | *rhubarb* | 5 | show | 5 |
| *problem* | 5 | *rose* | 5 | *six* | 5 |
| *proceed* | 5 | *rose-bushes* | 5 | *sweet* | 5 |
| *procure* | 5 | *sand* | 5 | *turkeys* | 5 |
| *pump* | 5 | *sediments* | 5 | understand | 5 |
| refer | 5 | *ship* | 5 | west | 5 |
| *reliable* | 5 | since | 5 | | |

of words peculiar to the farmers' list. This variation gradually increases in amount as the frequency of occurrence of words grows lower, and does not begin definitely at any one place.

Table IV will illustrate several of the foregoing conclusions. It contains all of the words in the farmers' list which occurred five times or more, arranged in descending order of frequency of appearance. There are 27 more words in this list than the number which present approximately seven-eighths of the total number of appearances. Words which appear in the farmers' list, but not in that part of the Ayres list which has been published, are printed in italics. It should be noted, however, that this does not necessarily mean that these words are without exception peculiar to the farmers' list, for they may have appeared among those words of a lower frequency than six in Ayres's list. Such words were not included in his printed list.

# A WORKING SCHEME OF PROMOTIONAL EFFICIENCY

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Until very recently Fond du Lac has used the old system of promotion by grades. Pupils have been kept in regular groups except in very rare cases, and even then exceptions were dubiously granted. Following an investigation of conditions of retardation, a series of principals' meetings and teachers' meetings was held, and it was decided to try to work out an adaptation of the scheme of individual instruction developed by the San Francisco Normal School.

The first point of attack was the promotion of pupils at the end of the school year in June. To place the situation clearly before the readers of this article, let me say that in Fond du Lac we have nine ward schools with all the grades in each building except in the case of two small buildings. Not including kindergartens, there are in use 69 grade rooms with an enrolment of 2,622 pupils, or an average of 38 pupils per teacher. It will readily be seen that the room enrolment is larger than desirable, and especially so when it is understood that quite a number of rooms necessarily have 45 or more pupils.

With these facts as a background, and facing the astonishing result of an investigation which showed that out of the grade enrolment 759 individual pupils were victims of retardation, it was decided to promote pupils by subjects instead of by groups; in other words, to hold no pupil back in any subject in which satisfactory work had been done, because of failure in other subjects, and to pay no attention whatever to grade except for purposes of seating in groups. If a pupil's promotion said "promoted to sixth grade," it meant that the pupil was to sit in the room where sixth-grade subjects were taught. The reverse side of the card was used for checking the subjects as shown in Table I. If the figure "6" were placed in black ink opposite every subject taught in the

sixth grade, it would mean a regular promotion; but if a "5" in red ink were placed opposite "Arithmetic," it would mean that the pupil had failed in fifth-grade arithmetic, and that the subject must be repeated in school if not made up satisfactorily. It should be noted in passing that in a great many cases, especially of pupils with one failure, the failure was made up during the summer, so that at the beginning of the new school year the pupil was regular again.

However, in many instances home interest was not keen, and ambition was lacking for special effort during vacation time, so there were many pupils who were irregular in grade. To provide for this emergency a general program was submitted to the teachers,

TABLE I

| Subject | Grade | Subject | Grade |
|---|---|---|---|
| Reading | | Drawing | |
| Spelling | | Penmanship | |
| Arithmetic | | History | |
| Language | | Physiology | |
| Geography | | Civics | |
| Music | | | |

who were given opportunity to make changes desired by themselves individually, provided that the general arrangement was not altered. For illustration, all arithmetic classes recite between 9:00 and 9:45 and all reading classes between 10:00 and 10:30 and so on. Thus, a pupil in sixth grade in all but arithmetic, and fifth grade in that, goes to the fifth-grade room for arithmetic. The same plan is being carried out in all subjects, and there is found to be no confusion or friction in this arrangement.

The possibilities presented by such a program led to the adoption of a plan to promote pupils, not at stated times, but at any time when ability is shown to carry the work in an advanced grade. This too is done in individual subjects and not by grades, which is easily made possible by a general uniform program. If principals did not have room duty it would easily be possible for them to devote a part of their time to special help. We expect to be able to have this expert assistance and guidance in all our buildings

soon. At present we have three principals free for such work, and this chance was given chiefly because the promise of results seemed so great. Last spring when this action was taken it was largely in the nature of an experiment, undertaken with the understanding that the principals should spend half of their time with special pupils, individually or in groups, having in mind those who have difficulty in keeping in grade, those who have lost time because of absence, and those who show exceptional ability and an ambition to advance more rapidly than the grade. However, this work is not confined to these three buildings merely. All the teachers in the system entered upon the year's work with the idea of giving every child all the opportunity for advancement that his ambition desired and his capacity allowed.

Above all else it should be understood thoroughly that we are decidedly opposed to the so-called "jumping a grade." As a complete record of each pupil's work follows him through the grades, t is easy to look up the record of past years. When a pupil is noticeable because of excellent work in any subject and his scholarship in general warrants the effort and his physical strength is considered sufficient, he is given special help in that subject, sometimes by a parent, more often by teacher or principal, until he has bridged the gap between his grade and the succeeding grade, and is then advanced in that subject. This is not done without consultation with the parent and a willingness evidenced for the effort to be made.

By going back to our program it will be easy to see the possibilities for this in the lower grades. Take reading for an illustration. Reading is from 10:00 to 10:30. In the lower grades, each room is divided into two sections, "A" the advanced group, and "B" the slower group. A pupil in section A, second grade, appears capable of more rapid work than his grade. He recites from 10:00 to 10:15. His teacher gives him extra work and special help at odd times and soon sends him to third grade in section B at 10:15 after he has had his work with her in second grade, section A. In a very few days he is ready to give up second-grade reading entirely and devotes his attention to third-grade reading though still continuing in section B, and if his ability warrants it he soon advances to section A in third grade, and has accomplished an advance of

an entire year in reading without losing anything. This process holds in any subject in the lower grades. In the upper grades, groups are not divided into sections, but the older pupils are better able to work by themselves, and help given them is more of the nature of supervision and advice.

It is undoubtedly true that in the past many pupils have not been kept busy with the work of a regular grade. In such cases habits of idleness have sometimes developed which later greatly hampered these young people. It is also as true that many pupils, held back by repetition of subjects because of failure in other subjects which caused retardation by group promotion, became discouraged and drifted into the hopeless class composing a considerable part of the average population of our schools. But when opportunity is given to every pupil to take advantage of all the ability he possesses, to go as fast as he can do the work satisfactorily, to set his pace according to his ambition, a great question has been solved. For the progress of pupils in school work is largely a matter of motive. Given the motive and an opportunity, the average boy or girl will show astonishing results when compared with results under a lock-step method and group promotion.

In our city, buildings are opened at 8:30 in the morning and 1:15 at noon. Principals found that pupils were glad to be on hand at 8:30 for help, and in a large number of instances requests were made by pupils to be allowed to come at 8:00 to do special work in preparation for special promotion which, according to our plan, may be given at any time of any day, of any week, of any month of the year.

Results have been checked for three months of this year, September, October, and November.

Not counting work done with backward or slow pupils by classroom teachers, since this is too frequent to be tangible, the records show that the three principals who have been relieved from classroom duty have saved pupils from probable failure by special help in 111 subjects. Owing to special help and self-directed activity on the part of the pupils in bridging the gap between corresponding subjects in consecutive grades, promotions have been made in 541 instances within three months, while preparation is under way in

view of anticipated promotion in 84 additional instances. In other terms 86 pupils have been saved from probable failure in 111 subjects, and 233 pupils have been promoted or are on the way to promotion in 625 subjects, and promotion has already been made definitely in 541 of these cases. Or making a further summary, 319 pupils have received special attention and definite, result-bearing help in 736 instances.

Table II shows in detail the promotions which have been made. In Table II the first column for reading reads as follows: 5 first-grade pupils have advanced to second grade in reading, 17 second-grade

TABLE II

| Grade | Reading | Spelling | Arithmetic | Language | Geography | Music | Drawing | Penmanship | Physiology | History | Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5 | 5 | 8 | 5 | ..... | 5 | 5 | ..... | ..... | ..... | 33 |
| 2 | 17 | 12 | 11 | 9 | ..... | 6 | 6 | 6 | ..... | ..... | 67 |
| 3 | 15 | 4 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 20 |
| 4 | 17 | 16 | 1 | 4 | ..... | ..... | ..... | ..... | ..... | ..... | 38 |
| 5 | 25 | 18 | 12 | 12 | 17 | 10 | 10 | 10 | ..... | ..... | 114 |
| 6 | 27 | 17 | 7 | 11 | 18 | 14 | 12 | 12 | ..... | 9 | 127 |
| 7 | 29 | 8 | 4 | 4 | 3 | 33 | 2 | 33 | 3 | 22 | 141 |
| 8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Totals.. | 135 | 80 | 44 | 45 | 38 | 68 | 35 | 61 | 3 | 32 | 541 |

pupils have advanced in reading to third grade, etc. Geography is not introduced until the fourth grade and it would seem easily possible to have allowed bright third-grade pupils to carry fourth-grade geography in advance of their own group. Physiology comes in the eighth grade for credit, and 3 seventh-grade pupils are found carrying this work. History for credit is taught in seventh and eighth grades, and we find 9 sixth-grade pupils taking seventh-grade history, and 22 seventh-grade pupils taking eighth-grade history, while 1 eighth-grade pupil has been promoted to high school in one subject. This last case is worthy of especial comment, as it is typical of many others. This pupil, a boy fairly large for his age, was a bright pupil, but rather indifferent to his work. When pressed by his history teacher to explain his lack of attention in

recitation he replied that he knew "all that junk." Investigation showed that he did a great deal of reading at home, and he was told that if he would hold himself in readiness for a quiz from his teacher at any time on history, he would be allowed to go to high school for a study. He chose physical geography, and is not only carrying that study with much credit, but also has shown marked improvement in his other eighth-grade studies. Motive and opportunity were what he needed. It is known by several eighth-grade teachers that some of their pupils are doing advanced work at home so as to be able to finish some eighth-grade subject at midyear, and thus be able to go to high school for one study for the second semester.

Analysis of the case of seventh-grade pupils now carrying eighth-grade subjects leads to pleasant anticipation. By referring to Table II it will be seen that seventh-grade pupils are carrying eighth-grade subjects in the following instances: 29 in reading, 8 in spelling, 4 in arithmetic, 4 in grammar, 33 in music, 2 in drawing, 33 in penmanship, 3 in physiology, and 22 in history, a total of 141 subject units in which advanced work is being done. With an enrolment of 291 seventh-grade pupils it will be seen that advance work in 141 subject units naturally will affect a fair proportion of the seventh grade. Next year, as eighth-grade pupils, they will be able to carry one subject or more in high school, and thus for them the gap between grades and high school has been bridged.

And this leads us to our first conclusion, namely, that no bridge can be built so effectively for crossing a gap as to fill up the gap and thus remove it. Under any system of division between grades and high school the gap exists. By the scheme of promotional efficiency where every pupil is responsible for his progress and advances according to his ability, no gap occurs, for, since some may carry high-school studies at the time with grade studies, high school has apparently been brought within reach of all. When the scheme was first suggested, someone said, "In that way your pupils won't finish their eighth-grade studies at one time," and at first this was considered an argument against the plan. Now we see that it is an argument for it.

Secondly, it is economy. According to Table II there are 64 unit subjects in the eight grades which receive credit, or an average basis of eight subjects through grades. If 111 subjects have been saved from failure, and promotion made in 541 cases, here is a total of 652 unit subjects gained or, on the basis of 8 unit subjects to a pupil, $81\frac{1}{2}$ pupils for a grade or one pupil for $81\frac{1}{2}$ grades. Even on a basis of 40 pupils to a room, this means a saving of two rooms for a year, which reckoned on the basis of $600 per teacher would mean $1,200 saved in instruction alone in three months' time on a basis of 2,622 pupils enrolled in these grades.

Thirdly, in three months 319 pupils out of 2,622 have received special help in 736 subjects. What does it mean to a pupil who is failing and does not grasp the subject-matter of the lesson to be placed on his feet and made to realize that he can do the work and need not eventually fail? What does it mean to those of shrewder ability to have presented to them a transfer from the slow and wieldy freight to the fast passenger service even though they be required to work their own passage? To be sure, care must be taken not to crowd pupils. Over-eager ones must be held in check where ability and physical strength seem insufficient to meet the needs of extra effort. In our experiment no attempt has been made to overdo the thing. Teachers have been warned repeatedly against unwise encouragement of doubtful pupils. But results are evident already in busier schoolrooms, in the development of the school into a laboratory where the pupil may test his power of self-directed activity, his sense of responsibility, his ability to match ambition with capacity and capability, in the changed attitude of the pupil for his school, in an awakened, keener interest of parents toward the progress of their children, in a heartier appreciation of parents for the school and its work.

And one word more. It has been borne to our minds with increasing insistence in the working out of this plan that a great number of pupils are capable of self-directed work. For these the recitation is merely a recapitulation of matter already mastered, which has lost interest for them. Consequently, the class period, if spent in recitation, is lost time as far as they are concerned. All

they need is occasional advice, explanation, and testing to see that they are working along the right line. It would seem advisable to convert many of our recitation periods into work periods, under teacher guidance if desired, but not necessarily and to let the pupils make further advance instead of rehashing past achievements. If recitation periods were decreased to two or three a week, larger areas of subject-matter would come up for discussion, and hence the recitation would be more interesting, and a greater amount of work would be accomplished than is now the case in the same time with no loss in attainment.

# AN EXPERIMENT IN MOTIVATION

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The motive which we have come to regard as so essential in the training of children becomes merely the starting-point of their education and the basis of the school study. The problem of school teaching is to acquaint the child with the life of which he is a part, to develop right concepts of it, and to establish right attitudes, habits, and ideals toward it. To this most important aim the school curriculum should be subordinated. It is the purpose of this article to indicate by an experiment the possibility of using the life of the community as a means of motivating the school work, and to give the child a knowledge of the community life of which he is to become a part, as well as an understanding of the forces underlying its organization and operation. This discussion will attempt to explain, not only how the powers of children may be developed, but how they may be developed with particular reference to the function they are later to serve in the larger social life.

During the year 1910–11 at my request I was provided with a group of about a score of boys, ranging in age from ten to fourteen years. These boys were selected from the Wyman School of St. Louis, a regular grade school serving as the observation school of the Harris Teachers College. The selection of the group was left to the principal of the school, who chose, for the most part, those indifferently interested in their school work, with the hope of arousing in them an interest in their regular school work. He also recognized that a failure to interest them would make no serious difference, as they were then uninterested.

A description of this experiment, then, will be suggestive of ways of motivating the school work and giving pupils knowledge of vital importance to their later life. The interest is not in the outcome of the experiment, but in the method of carrying it on

and in the extent to which it suggests a general solution for the training of grade children.

The plan consisted of two parts: visits to the factories of the city, and the study and discussion of the problems growing out of the visits. The factories selected to be visited were chosen with reference to a definitely worked-out plan in line with the general purpose of the experiment. The visit took place after school hours, one afternoon each week. The study and reading were left entirely to the members of the group, and the discussion took place on another afternoon of the same week after the close of school. The discussion always centered around the problems arising out of the inspection of the manufacturing processes and were of an industrial, labor, geographical, and civic nature. These problems were dealt with in so far as they were within the scope of the intelligence of the group.

The fundamental purpose of work of this kind is to restore to children during their period of training the opportunity of knowing the life of the community as children knew the community a century ago—an opportunity of which they have been deprived through the industrial revolution of the past century. In accordance with this general purpose we sought in so far as possible to have the boys arrive at a general appreciation of industry, and especially to understand the relation of individual industries to the whole social life. The following are some of the questions kept constantly in mind and asked in the study of each industry: To what extent is this enterprise essential to the life of the community? What comforts do its products afford the city, state, and nation? What are the amounts and kinds of labor used in it? The progress that had been made in the industry since the beginning of its history was always noted, and the possibilities for future development discussed. For instance, we were able to discuss the shoe industry after seeing it in its various stages of its evolution, at least through the last four centuries, at the present time in our own city. We found, indeed, in most industries opportunities to examine the handicraft stage and to compare it with machine production, noting the causes, the influences, the advantages and disadvantages of the changes.

We attempted, moreover, through this study to give a proper appreciation of the position of the laborer and the employer, and to indicate that each has a very significant service to render to the community and nation. Furthermore, this study gave opportunity to show how the development of industry has gone hand in hand with the progress of the community, and how, therefore, society, because of its development and increasing complexity, has created the demand for the articles produced in the factories. It can readily be seen that such a conception of industry properly presented could not but dignify the position of the laborer in the eyes of the boys.

More specifically our problem was to learn definitely about the industries of St. Louis, and after having done so, to regard these industries as types for the country at large. The knowledge of industry was not, however, an end in itself, but a starting-point for securing a knowledge of the social life. With this knowledge we wished to create new ideals and attitudes toward our industry and new patriotism toward our city and country. Two concrete illustrations will indicate our aims and methods. One of the institutions studied was the street-railway system and its relation to the life of the city. We began the study by a visit to the factory where the cars are built and got a glimpse of the whole process of manufacture, the length of life of cars, the number of laborers employed with the amount of wages received, the amount of skill required in each occupation, means of preventing accidents, and similar information. At the time of our visit the heating system was receiving lively consideration at the hands of the Civic League, the city council, and the newspapers, and for that reason we examined in detail the various plans of heating and ventilating street cars and the difficulties connected with each. Having learned the point of view of those connected with the system, we discussed and criticized their views at the next class meeting. In the meantime the class had had the opportunity to consider the newspaper and other discussions of the subject as a basis for class consideration.

Our next step was to take a trip to various parts of the city on the cars, following this with a discussion of the effects of street-railway transportation upon the value of real estate in the various

parts of the city, upon housing conditions, upon the distribution of residences of laborers, and many other similar questions. A fact that impressed the boys and caused much discussion and thinking was that the number of passengers carried annually had quadrupled in the last decade, with a population increase of only 19.6 per cent and no increase in street-railway mileage in the city. These points of discussion are merely illustrations of the problems considered. We considered the character, growth, and effect of the system from every point of view within the capability of the group. We tried always to raise questions, to arouse the interest of the children in them, and to stimulate permanent interests and continuous study rather than to reach finality in the discussions.

A second case was that of the bread industry. This industry afforded endless opportunity for study. We began by visiting the flour-mills in the city. This led to the study of the origin of the grain and a study of the grain-producing areas in the United States and of the world. Moreover, we attempted to make the study as human as possible by determining how the work of producing the grain was carried on; how grain was planted, reaped, threshed, stored in elevators, and brought to the mills. Here we had access to a lantern with plenty of slides, and this part of the work was presented by one of the boys in a half-hour talk from slides portraying the various phases of the industry in a highly interesting manner.

We studied, further, the methods of producing flour as compared with those of a century ago. This led us again into the bread-making industry and a comparison of it with that of the old days when "mother made the bread." We had access in this study to the factories of the simplest kind where one oven was used, to the biscuit factory where one thousand laborers were employed and the product sent to all parts of the world, and the bakery where sixty thousand loaves of bread were baked in one day. In this study there is hardly a problem of economic or social significance that the boy from ten to fourteen was not interested in and able in some degree to understand. The fact that the boys used their spending money in visiting the factories and their own time to devote to a study of these industries shows how completely the problems interested them.

The work as carried on had several marked results. If it were carried on more generally, it might be made to produce much wider consequences than resulted in this experiment. The boys of this group came gradually to realize that even common labor, if well performed, has its vital significance. Such a conception of labor, whatever one's position in life, is of vital importance in all relations of life and is necessary to the choice of a profession or vocation if one is to select wisely and judiciously. We noticed distinctly a growing appreciation of the industries and of the vocations. We entered frankly into a discussion of the various enterprises as a means of selecting those that would furnish suitable employment for young boys starting out in life, boys of the elementary schools, and, finally, the members of our group. It was decidedly interesting at first that the boys made no distinction between the various occupations as such. The single determining motive in the selection of a vocation was the ease with which they could earn a high salary or wage. In the discussion early in the year one boy said in stating his point of view: "Vaudeville actors get a fine salary, but they have a hard time, I guess. I would like to be a baseball player; why, there are six months that a fellow don't have to do nothing but have a good time."

It is seen, therefore, that each boy of the group had a motive in the pursuance of this study, and his intense interest was the result of his motive. We attempted through this motive, further, to gain a special knowledge of the various industries and the possibilities for the boys' progress in them. Consequently, salaries and wages, the kinds of employment, the preparation necessary for a person to make in order to advance most rapidly in the industry, the possibilities for its future development, and similar topics were considered. On the other hand, the discussion of these topics led to a consideration of materials used, means of production and acquisition, and in fact almost every problem in civics, economics, sociology, and geography, and even in social and industrial history within the grasp of the members of the group.

One of the most important results of the undertaking, for me and for the boys, was the opportunity for an acquaintance with the boys who made up this group. This acquaintance made it

possible to advise them in the serious problems of life—advice which some of them continue to seek. The aims, aspirations, and ideals of the boys were learned even as a father, many times, is not able to learn them in the busy life of the present. In such contact one gets at the real boy and is able to fix attitudes and points of view with regard to the most serious situations in life for him—situations outside of his actual life's work.

Since concluding this experiment I have conducted each year a course at the Harris Teachers College for teachers, having in mind the extension of work of this kind in the schools of the city. The following outline forms a basis for the study of factories, with the purpose of giving teachers the knowledge and points of view for carrying out the work successfully. The outline for the teachers assumes, at least to some extent, a broader knowledge and a comprehension of the principles underlying industry.

## AN OUTLINE FOR THE STUDY OF INDUSTRIES

I. The plant visited.

A. Mechanical conditions involved in the plant.

1. Kinds of power used.
2. Recency of improvements.
   *a*) Causes of improvements: that is to say, are the improvements due to legislation, to competition, to a desire to please the employees, to create public sentiment, and so on?
   *b*) Results of improvements on output, cost of production, amounts and kinds of labor, etc.
3. Labor-saving devices. The effect upon:
   *a*) The amount of labor required.
   *b*) The kinds of labor required.
4. Comparison of the present production with that of 1808, 1840, 1860, and 1890; discuss the observations gained from this comparison.
5. Specialization of labor due to:
   *a*) Kinds of labor available.
   *b*) The organization of industry.
   *c*) Competition in industry.
   *d*) Other causes.

B. Physical condition of the plant visited; sanitation, heating, lighting, ventilation, restrooms, lunchrooms, toilet-rooms, cloakrooms.

II. Labor in the factories.
  A. Physical effect of the work upon the person engaged.
    1. Liability to general fatigue or physical strain.
    2. Liability to accident.
    3. Effect of the activity upon the general health of the laborer.
  B. Psychical effect upon the persons employed due to:
    1. Educative effect upon the laborer.
    2. Educational needs of the laborer for the performance of the work required.
    3. Social position of the laborer.
    4. Opportunity for rest and social intercourse in the factory.

III. The industry of which the plant visited is a part.
  A. Relation of the industry to the community; its comparative value; the recency of its development; its social function; how it has affected living conditions; the cost of living; comforts; luxuries; the necessaries of life; do its products administer to all classes alike?
  B. What has been the effect of the introduction of machinery into the industry upon:
    1. The amount of labor?
    2. The hours of labor?
    3. Wages?
    4. The output?
    5. The cost of manufacture?
  C. Permanency of the industry; the number of employees; opportunity for, and qualifications of, persons entering.
  D. Materials used: Amount, kind, source, factors involved in bringing them together.
  E. Output: Character, where and how disposed of, general value, methods of selling.

This outline is suggestive and is carried out much more in detail in class discussion.

It has not been the purpose in this article to suggest a program. It has rather been to point out the factors involved in working out a plan in which the motive of the child is regarded. It has sought a method of making the outcome of the child's school experience of the highest value to him in his future life. This is presented with the conviction that some such plan must be followed to make the work of the school effective in the lives of present-day school children. This plan is concerned much more with children than it is with subject-matter. I have no quarrel with the subject-matter, but I am concerned with making the knowledge function in the lives of growing children.

# BEST METHOD OF MASTERING A MOTOR PROBLEM

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The gaining of motor control constitutes a great part of the work of the schoolroom. Probably no more important development has been made in recent years than the recognition of the place of motor activity in the education and development of the child. As a result, the curriculum contains many studies in which the motor side of the adjustment primarily is emphasized. Not only is this manifested in such studies as penmanship, learning one's native language or a foreign tongue, etc., but especially in gymnastics, aesthetic dancing, typewriting, musical technique, manual training, and other shop activities. Yet there has been almost no attempt to make an analysis of the psychological factors involved in these several motor activities, with the exception, probably, of the handwriting case. Almost the sole work done upon motor learning as a general problem has been restricted to the question of the distribution of the learning effort. The recent publications of Murphy have been typical of all the conclusions, namely, that "better work for the amount of time expended can be done in our schools (both for hand manipulation and also for the so-called mental work) through a distribution [of the learning]."[1]

While the question of massed versus distributed learning effort is an important consideration for the motor problem, another and even more fundamental one challenges our attention. This is the problem of the method of learning. Specifically, is it better to master a complex motor problem as a whole or to divide the learning into separate tasks, master each unit, and then connect the several units in proper serial order? This is the familiar problem of verbatim learning, where the conclusions have been definitely

[1] H. H. Murphy, "Distribution of Practice Periods in Learning," *Journal of Educational Psychology*, VII (1916), 150–62. (See bibliography.)

stated, namely, that the "whole" method is far superior to the "part" method, for the mastery of both logical and rote material. But this historic problem has never been tested out in the motor field. This paper is the result of such an attempt.

For the basis of the test, the maze was chosen. Several reasons supported this selection. First, the pencil maze (which the subject learns without the aid of vision but by means of the tactual-kinaesthetic sensitivities) constitutes a problem whose general nature is easily understood, yet which requires many trials and high expenditure of learning effort for its final mastery. Second, the errors and successes made in the several learning trials can be measured with absolute accuracy. Third, the maze area can be duplicated for animal learning and a sound bit of comparative work hereby rendered possible. (In this connection, it may be remarked that the facts of animal learning have great significance for the prediction and control of human behavior, and that the experimental educators can well afford to study some problems of learning from this comparative viewpoint.) Fourth, the maze problem is highly serviceable for whole-part testing. The accompanying diagram shows this. In the maze under discussion, there are four distinct maze areas (Fig. 1), each having entrances and exits at a common center, each possessing the same number and type of cul-de-sacs, the same length of true pathway, and, by the mere removal of sliding panels, all capable of being connected without any linear waste. Consequently, this maze could be learned or run as a whole, in parts, or in any desired combination of parts. It is hereby strictly comparable to a four-stanza poem or to a nonsensical series of definite length and number of syllables.

As subjects for human testing, students from the introductory psychology classes were used. Each subject was assigned some particular learning method and given two trials a day until the maze area was mastered. Rats were the animals employed. The number of trials per day, etc., was the same as in the human situation. In all cases each run was numbered and timed, and three types of errors recorded—cul-de-sacs entered while going forward, while returning toward the entrance, and the number of sections of the true pathway traversed while returning toward the closed

entrance. These errors appear in the records as types A, B, and C respectively.

Taking one's cue from the results secured for verbatim learning, it is not surprising that the "whole" method proves far more efficient than the "pure part" method in the motor realm, especially

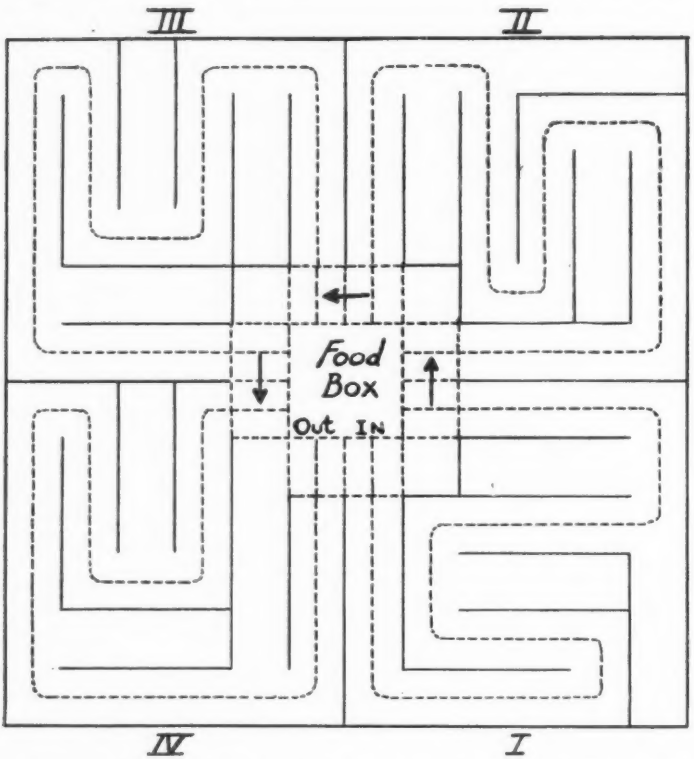


FIG 1.—A maze for testing learning by whole and part methods. Each of the four sections has an independent entrance and exit at the common center. The course of the true pathway is represented by a dotted running line. Dotted lines across the passageway represent removable panels. By means of these, it was possible to so arrange the areas that the maze could be learned as a whole; in parts later connected; forward or backward, etc. The rectangular areas around the center form a distributing gallery, by means of which the runner might pass from one section to another not adjacent, e.g., I–III.

when no more retracing is allowed than is possible in part learning. For the humans there is an advantage in percentage terms of 26, 126, and 193 per cent, respectively, for the number of trials, time, and errors. In the case of the rats there is no advantage for the number of trials, but there are very significant figures of 13 and 44 per cent respectively for time and errors.

Time does not permit an extensive report of the behavior of the learners. It is necessary to state, however, that the weaknesses of the "pure part" method are not assignable to conditions operating during the learning of the four separate sections. Rather, they are assignable wholly to the numerous trials required for the connection of the separately learned parts. Confusion, hesitation, retracing, random activity, etc., characterize these acts of connection. The disturbing agencies here are the break-up of those factors of place association which have been established in the earlier learning of the four units. These positional factors are both temporal and spatial. Short time-spans come to mean the solving of the short problem. Short distance traversed comes to mean the cessation of the running activity. Moreover, each turn, cul-de-sac, particularly difficult place, etc., becomes located just as definitely in the temporal and spatial series as a certain syllable does in a nonsensical series. In the final act of connecting the various motor units, however, all these positional establishments that meant success under unit conditions now, even when satisfied, fail to bring the looked-for results. Their break-up is demanded before the entire maze can be run perfectly.

The proof of these assertions is mainly experimental. The question to be answered is as follows: If the weakness of "part" learning is assignable to the act of connection, cannot this act of connection be so controlled as to produce results that are superior to those of the "pure part" method, and which consequently approach those of the "whole" method as a limit? Three modifications of the "pure part" method are here reported. The "progressive part" method calls for the mastery of sections I and II as separate problems, these areas then being connected into a unit series as soon as section II is learned. Section III is learned as a unit and added to the I–II unity just established. Section IV,

learned and then added, completes the tuition. This method differs from the "pure part" method not in so far as regards learning all the sections as units but in that each part is joined to the earlier parts as soon as learned. This calls for the break-up of the

TABLE IA

WHOLE AND PART METHODS IN MAZE LEARNING

Tables to show the average of human and rat groups in learning a maze by whole or part methods. The first whole method permits unlimited returning; the second allows no more retracing than is normally possible in the "pure part" method. The various part methods differ regarding the time and manner of the act of connection.

| METHOD | HUMANS | | | ERRORS | | | |
|---|---|---|---|---|---|---|---|
| | No. of Individuals | Trials | Time in Seconds | A | B | C | Total |
| Whole | | | | | | | |
| Returns allowed | 6 | 12 | 641 | 16 | 13 | 97 | 126 |
| Returns prevented | 6 | 17 | 541 | 23 | 6 | 52 | 81 |
| Part | | | | | | | |
| Pure part | 6 | 23 | 1,220 | 36 | 25 | 176 | 237 |
| Progressive | 6 | 10 | 352 | 10 | 3 | 44 | 57 |
| Direct repetitive | 6 | 11 | 618 | 15 | 11 | 70 | 96 |
| Reversed repetitive | 6 | 22 | 1,014 | 27 | 24 | 175 | 226 |

TABLE IB

| METHOD | RATS | | | ERRORS | | | |
|---|---|---|---|---|---|---|---|
| | No. of Individuals | Trials | Time in Seconds | A | B | C | Total |
| Whole | | | | | | | |
| Returns allowed | 12 | 27 | 4,174 | 54 | 24 | 139 | 217 |
| Returns prevented | 9 | 30 | 1,666 | 56 | 4 | 51 | 111 |
| Part | | | | | | | |
| Pure part | 9 | 30 | 1,907 | 74 | 17 | 108 | 199 |
| Progressive | 9 | 11 | 662 | 39 | 2 | 24 | 65 |
| Direct repetitive | 11 | 21 | 1,442 | 45 | 9 | 88 | 142 |
| Reversed repetitive | 8 | 17 | 882 | 22 | 5 | 49 | 76 |

positional establishments when these are few in number and not deeply intrenched. A second method is the "direct repetitive." This calls for the mastery of section I, and then a review of section I as leading into section II. This is continued until the I–II area is mastered. In turn, the united I–II area is repeated in each trial

when section III is being mastered, and the I–III unity in conjunction with the mastery of section IV. This method not only reviews the earlier learned units but, better, it calls for the disruption of the positional establishments a short time after they are once formed. The third method is the "reversed repetitive." Herein section IV is learned as a unit and the runner then started upon section III, ending each trial with the running of the previously learned section IV. When the III–IV area is completed, Section II is added as the new element of the enlarging motor series. Section I, together with the steady review of all the subsequent areas, completes the learning. Both of these "repetitive part" methods satisfy the demands of any part method. Both have strength, as does the "progressive part" method, in that they negate the influence of those place associations which are the injurious by-products of all learning of this type.

The scores of these "modified part" methods are highly significant. They are naturally far superior to those of the "pure part" method, but the surprising feature consists in the fact that the results of the methods do not merely approach "whole" method scores but rather they far excel them. The data warrant but one conclusion. *If the act of connection is controlled, the weaknesses of the "part" method are so negated that the part procedure is preferable to the whole.* This is not the entire story, but it is the major part of it. The rest is that any "part" method has certain inherent advantages, which cannot be treated with any satisfaction in this paper. These inherent advantages, taken in conjunction with the progressive and distributive handling furnished the positional factors, go a long way in explaining the superiority of such "part" methods as are herein discussed. It seems rational to assert, therefore, that some form of the "part" method, and preferably the "progressive part," should be selected when a motor habit is to be established.

The writer is aware that his conclusions contradict the findings for verbatim learning. Several explanations are possible. His results may be inaccurate, and hence not true for the motor field. Or, perhaps the same results would not maintain upon the motor and the so-called ideational levels. To the first of these possibilities

the writer cannot agree. The second only invites speculation, because there are too few experimental data. Rather, the writer would suggest that these "modified part" methods need to be tried out in the fields of verbatim learning and there found inferior, before the wholesale[1] acquiescence to present results is continued.

[1] Results in verbatim learning, published by Professor Freeman in his *Experimental Education* (Houghton Mifflin Co., 1916), pp. 67–70, strengthen the suggestion.

# THE COLONIAL HILL SCHOOL SAVINGS-BANK PLAN

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The value of thrift is one of the prominent lessons of the great European war. Many observers believe that the decision will finally rest with the side whose citizens have saved the most money. The long British purse and the sock of the French peasant are of historical importance and must be even more valuable now. Americans are often said to be a nation of spenders, who waste enough for other nations to live on. Our enormous natural resources have thus far supported our extravagance, but recent clamorous outcries in every newspaper and magazine, and rumors of municipal, state, and federal investigations, point to the coming of a period of enforced retrenchment when pennies must be counted and the budget plan of spending begun. It is a matter of national and individual safety. The Bankers Association has passed resolutions, an American Society for Thrift is organized, the federal government has devised the Postal Savings Bank, and the National Education Association approves carrying the practice of thrift into the schools.

Every propaganda sooner or later discovers the public school as the institution more powerful than any other in the establishment of principles. The school endeavors to select those experiences which will introduce the youth to the best life of the community and, as new demands and new ways of meeting them arise, the curriculum is continually enriched to include many other things than the scanning of textbooks and working in laboratories. Thrift in time, materials, and money is essential to the economic survival of the families of the masses with whom it is a constant struggle to keep the wolf from the door. Being thus fundamental and

broadly applicable, thrift and the savings habit must be early and carefully developed in the minds of the children. The various school-savings plans are answers to this demand.

The first one undertaken was in Belgium in 1873. In the same year another was established in Beloit, Wisconsin, and by 1883 the movement was put on a permanent basis in Long Island City by Mr. John H. Thiry, who was an emigrant from Belgium. Since then school savings banks have been introduced into the schools of France, England, Germany, Denmark, Austria, Canada, Switzerland, and into all sections of this country, especially in the East, North, and West, until we now have them in thousands of schools with deposits of hundreds of thousands of dollars. Their success is attested by bankers and school officers, by the Women's Christian Temperance Union, and by club women generally.

An excellent history of the movement, with descriptions of the several plans used in different schools, is found in the *United States Bureau of Education Bulletin, No. 46*, 1914, entitled "School Savings Banks." Some of the plans are very dependent upon the services of the local banks, which on account of the labor involved in booking many small accounts often refuse deposits of less than one dollar, and sometimes require regular deposits, with interest beginning only when several dollars have been saved. This results in the opening of but few accounts by the children, to whom $1.00 is an immense sum, reached only after weeks of saving.

Other schemes involve machines and mechanical savings devices which are complicated, costly to buy, and difficult for the children to understand. They are artificial in character, not like banking in the business world, and being so impersonal they seldom arouse the enthusiasm of teachers and pupils, whose eager co-operation is necessary for any large success.

Still other plans impose heavy burdens of red tape in the form of cards, ledgers, bankbooks, checks, and rules which only older children understand, which are expensive, and which arouse only half-hearted interest in teachers and principals.

Evidently any successful school savings-bank plan must be quickly intelligible to young children, very light in its demands on the time, money, and skill of its managers, and attractive to the

191.....

Grade.....

COLONIAL HILL SCHOOL

SAVINGS ACCOUNT OF

NAME.....

| | |
|---|---|
| 1st Week | 13th Week |
| 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c | 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c |
| 2d Week | 14th Week |
| 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c | 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c |
| 3d Week | 15th Week |
| 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c | 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c |
| 4th Week | 16th Week |
| 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c | 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c |
| 5th Week | 17th Week |
| 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c | 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c |
| 6th Week | 18th Week |
| 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c | 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c |
| 7th Week | 19th Week |
| 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c | 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c |
| 8th Week | 20th Week |
| 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c | 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c |
| 9th Week | 21st Week |
| 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c | 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c |
| 10th Week | 22d Week |
| 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c | 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c |
| 11th Week | 23d Week |
| 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c | 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c |
| 12th Week | 24th Week |
| 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c | 1c \| 2c \| 3c \| 4c \| 5c \| 10c \| 25c |

## RULES AND REGULATIONS

It is agreed and understood by the holder that all deposits and withdrawals are subject to the following rules:

1. That no withdrawals or transfers will be permitted and it is agree that deposits cannot be withdrawn before . . . . .

2. Deposits will be received on Thursday of each week.

3. That pupils transferring to other schools will receive only the amount deposited, without interest, and that one week's notice must be given before withdrawal.

4. That this card shall be presented when making deposit, and punched by the teacher together with the school card bearing duplicate number, and pupil agrees to accept amounts punched on school card as the correct amount of deposits.

5. That if pupil loses card a duplicate card may be had upon the payment of one cent.

masses of children, teachers, and parents. The Colonial Hill plan intends to meet all these conditions.

The two accompanying figures (p. 743) are facsimiles of the front and back sides of the deposit cards. Duplicate cards are furnished each child; one, printed in black, is kept by the child, and the other, in red, is kept by the teacher. The duplicates are punched by the teacher together at one effort, the red one being kept by the teacher receiving the deposit, and the black one given to the pupil as a receipt. The figures punched in each week's line indicate the amount of that week's deposit, which is then listed out in the free space to the left of the first column and to the right of the second column of weeks. The cards can register amounts of fifty cents per week; larger amounts are registered on separate cards. Twenty-four weeks are listed because this was the number remaining in the school year when the plan was put in operation. On deposit days the teachers report the number of depositors with amounts of money to the principal, who reports the school total to all rooms the following day. The whole school's sum is deposited immediately at the bank and draws 4 per cent interest from date until withdrawn. At the end of the year a prorating to each depositor of the total interest accrued at the bank according to the amount of his deposits assures interest at 4 per cent on each deposit from the date it is made.

The simplicity of the plan, in so far as the plan itself is concerned, is its chief point of advantage over the other plans examined. The prorating of interest at the end of the year alone saves an immense amount of labor. Only three cards are called for, each of which is self-explanatory. The child always has his deposit card to figure with, and instantly understands every move made with the money. Not more than from five to thirty minutes per week of the teacher's time are required, and this can be fairly associated with time allotted to number work and arithmetic. A few minutes per week from the principal are needed. Almost no bookkeeping is involved, and every child who has a penny can open an account.

The values to the child, the pedagogical opportunity to the teacher, and the advantages to the organization as a whole, incident

to a skilful use of this savings plan, are many. Thrift, while more frequently associated with financial transactions, is not thus limited. It is a principle applicable to all conduct, and hence essentially moral—the living within one's income of every kind. Older children can carry the principle into business, political, and social activity of various sorts until waste in every form becomes intolerable.

Thrift as an ideal is hardly more than so many words, if only talked about. The only way to learn how to use money is by using it. Every teacher is familiar with children who can repeat rules concerning adverbs, but who do not know an adverb when they see it. The child is as actively interested in his ten pennies as his father is in ten dollars. He plans as hard and learns as much in using his ten cents as his father does with ten dollars. The boy who gets his lunch with seven pennies and saves three for the bank, who makes his pencil stubs last a week longer, who uses cheaper paper for scratch work and deposits 5 cents, who limits his attendance at picture shows, and passes the candy shop with pennies jingling in his pocket until deposit day—this is the boy who really knows that five dollars is more than one dollar and that a dollar is not simply a bright piece of silver. This boy enjoys the feeling of self-confidence and independence which comes from consciousness of purchasing power. He has learned to get this power by earning and saving money.

The thrift ideal to be effective must thus be made over into habits of thought and action by daily application through long periods. It is neither permanent nor active until it is translated into these detailed saving habits of earning money, refusing to spend it except for legitimate values, holding it until banking day, observing the depositing formalities, preserving the pass card, and finding genuine satisfaction in these acts. All of these habits are growing under the administration of the Colonial Hill plan.

The saving of money and the forming of thrift habits are the values first discovered in a school savings-bank plan. But to trained teachers perhaps its chief value lies in the immense opportunity afforded for the vitalization of a great deal of regular school work, and this the teachers of Colonial Hill have been quick to see.

Many necessary school problems, difficult and irksome when encountered as so much assigned textbook work, are vigorously attacked when found to arise out of the accurate disposition of the cherished savings. The powerful interest in financial affairs furnishes sustained motive for almost any amount of energetic work with calculations or other studies which are genuinely associated with them. The child studying to estimate and increase his store of pennies is as keenly industrious as is the business man who works day and night to build up his fortune, because he has the same human economic interest. Work thus done exhibits that singleness of attention and fulness of insight, characteristic of children when the impulse comes from within rather than from without, whose presence makes the teaching day a glorious one.

The classes in arithmetic are much stimulated. Primary children must count their pennies themselves and name the number to the teacher. They must count the total collection in their room, divide it into lots of threes, fives, and tens, and find the average deposit. Older children wish to compute the interest on 50 cents for 6 months, the total sum in principal and interest resulting from a weekly deposit of 25 cents, the net profit of the bank at the end of 30 days less cost of cards. The classes in composition have a great variety of topics for oral and written development. "A Good Savings Scheme," "How Andrew Carnegie Got His Start," "Mary and Her Dollar Bill," and "How I Hope to Go Through College" are samples. The geography maps will have to be consulted for trips taken on the savings of one or several years. Here, too, are descriptions and pictures of industries and natural scenery, which must be studied in anticipation. These are samples of associations reported, and any number of others will be discovered by the children themselves and by resourceful teachers.

Present-day educators are urging a greater socialization of the curriculum: children must learn to co-operate in groups for the achievement of social ends. This value is not neglected in our plan. The whole school eagerly anticipates the principal's report of the total week's deposit. Every child feels that he has contributed to the honor of the school by making his deposit. Active rivalry exists between the rooms over the amount of their weekly

and accumulating totals. The children in many cases urge each other to greater economy, to more paid work, and to greater care in the use of paper and pencils for the good of the room. A student who discovers a practical way to make a dime is a public benefactor in his own and in his classmates' eyes. One room as a group is engaged in collecting and selling waste paper and magazines. Small groups of several individuals can undertake partnership business.

Among older children there arise frequent occasions to point out the social immorality of individual waste. They are able to see how their care of money will be a help to their families and to the general business life of the larger community. Municipal wastefulness of money, materials, or time can be made apparent as a drain on everyone's resources. A hostile attitude can grow toward anyone who wastes the room's time by any serious individual disturbance.

No description of a phase of school activity is complete without a consideration of its meaning to patrons. Fathers and mothers alike are interested immediately in a savings scheme. It is an excellent subject for discussion in meetings of parents' associations. Unlike much of the school's activity this is one which the layman readily grasps and does not have to take on faith. Several parents have reported cases of gum and candy sacrificed to the saving of pennies, teeth, and health. They are glad to be asked how to earn pennies and to hear children at play telling how a boy in their room made seventeen cents in one day. Here is something concrete which they heartily approve and which they can substantially support. Parents should be made to understand in the beginning that most of the work of earning and of saving money must be done by the children themselves in order that the children themselves may grow by it. The plan is not designed to send the boys and girls on weekly requests for deposit money. Out of his own earnings, or out of his regular stated allowance, and of his own accord the child is to save. The parent will soon estimate this as an intelligent effort to strengthen the will of his child, and will lend every aid possible. The parent and the teacher have then one firm basis for common understanding and co-operation.

In concluding, it must be made clear that the values named above do not automatically follow the installation of a savings scheme, however simple and excellent it may be. Intelligent and enthusiastic support by the teachers is essential. This does not come automatically. Teachers being first men and women do not by original nature develop saving habits or think in terms of the economy ideal, the vitalization of school work, and the need for socialization and consideration of parental attitudes. Only after long months of child-study, after pondering over the aims of teaching and what knowledge is of most worth, do they find clear meaning in these terms. This comes only with a price in time and thought. That more than three hundred of their children have made deposits totaling over six hundred dollars in the first nine weeks suggests that the teachers of the Colonial Hill School have paid this price, and that the children in their charge will receive all the values offered by the school savings bank.

# THE PROBLEM ATTACK IN TEACHING

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The indispensable prerequisite to effective work is that the matter in hand shall be recognized and attacked as a problem. One thinks seriously and works energetically only when an obstacle or a difficulty appears, raising a problem.

The most ordinary experiences of life illustrate clearly the foregoing fundamental truth. A few months ago a good friend of mine who had been operating his new automobile for about two months took me for a drive of several miles in the country and exhibited great delight in showing the smoothness with which his new machine operated. We parked the car for an hour's visit; it was operating so smoothly that it seemed impossible for it to get out of repair. When the time came to start home, it refused to budge. For the first time he realized that his fine new machine could present a problem. I inquired the difficulty. He hastened to respond that he hadn't the least idea. Various drivers of passing machines offered assistance until finally, after one had busied himself for several minutes and the starter was touched, the car was ready for action again. The combined wisdom of all who had attempted to treat the machine pointed to the conclusion that something was wrong with the electrical equipment. Just what was wrong no one knew; but my friend assured me that he would immediately proceed to familiarize himself with the electrical equipment and with the possible types of difficulty which might appear in its successful operation.

The practiced cabinet-maker does nothing in the presence of all his materials, with all his fine skill, until a job appears to be turned out. Meeting the requirements of the job presents a definite, concrete problem upon which he goes to work with all his accumulated art, persisting until the task is completed. The

lawyer, with all his fine array of volumes, does little or nothing with them until a problem presents itself in concrete form as a case. Similarly, the physician makes little or no use of his extensive library until a patient is discovered presenting certain phenomena which baffle him. Then his library comes into use in his effort to solve the problem presented by the case.

In most schools relatively little effort is put forth by the pupils, because the major portion of schoolwork is attempted without the children having met and clearly conceived a problem which is of vital importance to them and therefore worthy of solution. In most of their schoolwork children are concerned with the use of books, although the number of exceptions to this practice is rapidly increasing. In their use of these books the main problem confronting the children is merely to see what the book says. Before going to the books the children have not met a question which they are concerned to solve. They simply go by direction of the teacher's assignment to the next few paragraphs or pages, or the next chapter of the book, just because that assignment was made. Attention is therefore concentrated on trying to find out and remember what the book says. Ordinarily the study is not fundamental enough so that the children look behind what the book says to see the problem which the author is trying to solve, if perchance he had one in mind.

It is very clear that such procedure is wasteful of time and energy and is calculated to establish habits of musing and browsing over books rather than concentrated, thoughtful use of them. In the light of our principle as stated above and of our knowledge of its operation in the ordinary concrete situations of life, it is clear that pupils should go to the pages or chapters to which they are directed with sighificant problems and vital questions in mind. The problems should not only be significant and vital in the abstract sense, but they should be personally so to the pupils concerned. The pupil who goes to a textbook assignment should go with as much concern and anxiety to read it as animates the child who is trying to read the directions accompanying the new electrical toy which he found in his stocking on Christmas morning.

Someone has pointed out that perhaps the reason why students who have succeeded indifferently in the high school and liberal arts college awaken and begin to make good progress in vocational and professional courses is because they are working on topics, questions, and problems which they clearly see are related to the careers for which they are preparing. In a normal school a prospective teacher tries to master the fundamentals underlying the problem of how to make a program, how to teach beginning reading, how to discipline a school. In a school of commerce the prospective business man tries to learn how to write attractive, interesting letters, how to keep correctly a set of books, how to study the markets, that his investments may be safely placed. Similarly, students of dentistry, medicine, law, and the ministry are at work on problems definitely related to the successful pursuit of the career each has projected, following the completion of a course of training.

There is evident need of so organizing and directing the work and energy that pupils in the public schools, who are less mature, and who are therefore in greater need of the stimulus of definite, concrete problems, may find themselves in the various exercises and lessons of the school and in preparation for the same, at work in an effort to answer questions about which they are concerned, and to solve problems of vital importance to them. These problems should be as definite and as provocative of interest and anxiety as is the problem of the little child who thinks he must write a letter to Santa Claus if he wants a Christmas present. Confronted with that problem, the child hunts help. He inquires how to begin his letter, what to say, how to spell, and so on. Successful teachers are rapidly learning how to guide and direct the work of children in such way that the work they do is centered about the solution of problems and the answering of questions which are of vital concern to the pupils engaged.

From the standpoint of their origin, roughly speaking, there are two types of problems—those originating outside of any particular subject of study and those originating within the subjects of study. Each may be briefly and concretely illustrated.

A problem originating outside of a subject of study may be simple, or large and complicated. The latter type may be chosen for illustration here, as it embodies all the possibilities of a small problem and additional ones. A little over a year ago the faculty and students of the normal school at Kirksville, Missouri, decided to develop a pageant of Missouri as an appropriate way of celebrating the anniversary of the state's admission to the Union. The solution of the problem afforded opportunity for work in many courses in the normal school. In certain of the history classes the facts which should be embodied in the pageant were carefully investigated and put in order, whereupon they were turned over to the English department, which assumed the task of organizing these facts into the appropriate acts and scenes. When this task was tentatively completed, the pageant was turned over to the public-speaking department, which took the responsibility of staging it. After careful work, the various actors were selected and the preparation necessary to carry the message of the pageant to the prospective audience was begun. But the successful staging of the pageant required scenery, which it was necessary to call upon the fine-arts department to paint and arrange, costumes, which it was necessary to call upon the domestic-art department to design and make, and various other paraphernalia, which it was necessary to have planned and made by the manual-training students. So large a problem as this, by the time it was solved, had involved a large percentage of the students of the school and likewise a large number of the faculty, and had supplied genuine motive for the work done in many subjects. That the various tasks, large or small, were performed with energy and enthusiasm could not be doubted by anyone who saw the work as it progressed. It is evident, of course, that none of the problems presented required merely the reading of a few paragraphs, the next pages, or a chapter or two as a lesson. Such reading or investigating as was done was always focused definitely on an effort to find help in the solution of some problem.

Problems of this sort originating in a social situation outside of any subject of study, which afford a basis for some of the best work that is being done in public schools today, are numerous.

When children are planning an assembly exercise or a program for a parent-teachers' meeting, or when they are trying to find ways of raising money with which to buy a piece of statuary for the school, or when they are planning a lawn party for the entertainment of their classmates, many vital problems are met which afford most significant sorts of work. They go to books or magazines or encyclopedias, or to other sources for help in the solution of their problems. Under such conditions they are working at no time merely to cover the paragraphs or pages constituting the lesson assignment.

How a subject of study may be pursued upon the basis of solving the problems which appear successively in the mastery of the subject may be illustrated briefly from United States history. In this illustration no effort is made to state accurately and inclusively all the problems which would be met in covering the period of United States history chosen for illustrative purposes. The illustration is intended to show the type of problem which should be in the minds of the children as the basis for effective work on their part. The large problem as here stated would break up into smaller ones from day to day, although care should be exercised constantly to have the children feel that they are working on problems rather than finding answers to little detailed questions. I suggest the following problems covering the work in United States history up to the opening of the national period:

How the Old World Came to Find the New: This will take care of the attention usually given in texts to the unrest in Europe and to the efforts to find a more favorable route to the East.

The Attention the Old World Gave to the New after Finding It: The working out of this problem would be concerned with the discussion in the ordinary text pertaining to discoveries, explorations, and sporadic settlements.

The Resulting Conflicts from the Settlements Made in the New World: The solution of this problem will carry the work to the close of the intercolonial wars.

The Outcome of These Conflicts: The solution of this problem will serve to center the attention of the pupils upon the English colonies, with which United States history is mainly concerned from this time on.

Why the Colonies Began to Dislike England: This is the next problem which presents itself.

The Result of the Dislike.

How the Colonies Organized Themselves for Work Following Independence.
The Weaknesses Which Appeared in Their Organization.
Why the Colonies Started a Movement for a Better Government.
The Results of Their Effort to Improve the Government.
How the New Plan of Government Started Off.
Some of the Difficulties of the New Government.

The foregoing illustration might be extended to cover the whole of American history. The object, however, is not to discuss American history or its teaching, but to illustrate the nature of the attack so that the attention of the children may be centered upon problems and their solution, rather than upon the reading and memorizing of pages and chapters. By this type of attack pages and chapters will be read, of course, but they will be read to some purpose. The pursuit of this purpose will lead to the neglect and elimination of useless, unimportant materials found upon these pages and in these chapters.

It is evident, of course, that this type of attack supplies one of the most fundamental requisites to motivation: it supplies a problem to be solved. The motive arises in pupils because of their interest in, and their anxiety for, its solution. The more vital and significant the problem to those that work upon it the greater and the more fundamental the motive for its solution. This type of attack likewise supplies the conditions requisite for training the children in good habits of study. When the children are at work upon real problems, the teacher does not have to take thought in any formal way as to the factors in study. The solution of the problem requires the gathering of data, the organization of those data, the elimination of materials which are not pertinent, the suspension of judgment, the weighing of evidence, and the drawing of a conclusion, which means the solution of the problem upon which the effort has been centered.

The economies to be realized from directing school work from this standpoint are correspondingly as great as the savings which are accomplished by a good business man who determines definitely what he wants and how to secure it before he begins to spend money. If he begins merely by the "trial-and-error" method, after considerable loss of time and great expense he may arrive,

if the process does not bankrupt him, at the same place he would have reached if he had directed his energies and expenditures more wisely from the outset. Pupils need to be so directed that their reading, investigating, and studying are focused upon a definite thing they are concerned to accomplish. Under such conditions mere reading, browsing about, and "fooling around" are reduced to the minimum. Such wasteful, ineffectual procedures are displaced by definite, careful work upon the problem under solution.

# EDUCATIONAL WRITINGS

## I. SUMMARY OF THE LITERATURE ON GENERAL METHODS FOR 1916

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The purpose of this article is to summarize briefly the literature on general methods which has been published since January 1, 1916. This material may be classified into two general divisions: A, systematic discussions of the problems of methods; and B, intensive discussions of special problems in the field of general methods.

### A. SYSTEMATIC DISCUSSIONS OF THE PROBLEMS OF METHODS

The most thorough and systematic treatment[1] of the problems of general methods which has appeared during the past year is entitled *How to Teach*, by Dr. G. C. Strayer and Professor Naomi Norsworthy. This book includes a comprehensive summary of the psychological facts and principles which underlie effective method, as well as a series of specific suggestions to be observed in teaching. The scope of the book is well represented by the following topics: "The Work of the Teacher," "Original Nature," "Attention and Interest in Teaching," "The Formation of Habits," "How to Memorize," "The Teacher's Use of Imagination," "How Thinking May Be Stimulated," "Appreciation," "The Meaning of Play in Education," "The Significance of Individual Differences," "The Development of Moral Social Conduct," "Transfer of Training Types of Classroom Exercises," "How to Study," and "Measuring the Achievement of Children." The discussions of the foregoing topics include several types of evidence. The chapters on "Original Nature," "Habit Formation," and "Individual Differences" include the results of recent psychological and educational investi-

[1] *How to Teach*. By G. C. Strayer and Naomi Norsworthy. New York: Macmillan, 1917. Pp. 294.

gations. The chapter on "Thinking" shows the influence of Dewey's philosophy. Practically every chapter contains illustrations based on actual classroom practices. On account of the psychological background, which many of its discussions presuppose, this book is much better adapted to the mature or experienced teacher than to the beginner. It merits, however, a prominent place in the working library of each teacher.

Problems of method are discussed briefly in a book[1] entitled *Fundamentals in Elementary Education*, by Claude A. Phillips. The book as a whole was written as an introductory volume for classes in normal schools and for training classes in high schools. Problems of organization, administration, school buildings, methods of teaching, the curriculum, play and recreation, vocational education, and measuring the results of teaching are included. It is interesting to note that more emphasis is given to the problem of methods than to any other single phase of education. The problem of methods is attacked from the viewpoint of classroom management. In this connection specific practices are discussed which make for economy and efficiency. The psychological factors involved in instruction are discussed briefly and in very simple terms. Unless supplemented by a considerable amount of explanatory material, the discussion of such topics as instincts, interest, and individual differences will not prove especially helpful. The technique of the recitation is discussed in two short chapters, in which the reader's attention is called to the more important problems which arise in different types of recitations. In this connection, the general principles of method which are discussed are applied to a limited number of lessons in history, arithmetic, geography, composition, etc. Inasmuch as the more important problems are emphasized briefly and forcibly, this book is well adapted to the needs of students who are making an introductory survey of the problems of method.

A second book[2] which has been organized to meet the needs of beginners is entitled *The Essentials of Teaching*, by T. J. Burnett.

[1] *Fundamentals in Elementary Education*. By Claude A. Phillips. New York: Charles E. Merrill Co., 1916. Pp. 304.

[2] *The Essentials of Teaching*. By T. J. Burnett. New York: Longmans, Green, & Co., 1916. Pp. xiv+250.

This book may be characterized as a primer of methods. It consists of a series of lectures which were given to non-professional teachers who were engaged in teaching continuation classes in Edinburgh. The author has selected a limited number of practical topics for emphasis, such as the technique of class management, the preparation of the teacher for a lesson, etc. Although the lectures were planned originally for non-professional teachers, they are based on scientific principles in the main, and may be read with considerable profit by anyone who wishes to make an initial survey of the more important problems of methods.

### B. INTENSIVE DISCUSSIONS OF SPECIAL PROBLEMS

*a*) *How to study effectively.*—As early as 1909 the importance of this problem was emphasized pointedly in a book entitled *How to Study and Teaching How to Study*, by Dr. Frank M. McMurry, and in a monograph entitled *Teaching Children How to Study*, by Lida B. Earhart. Since the appearance of these two books, writers have attached increased importance to the methods employed by pupils in studying. The following quotation illustrates a recent but typical point of view: "It is safe to say that failure to guide and direct study is the weak point in the whole educational machine." Although the importance of the problem has been widely recognized, there has developed very little definite advice, either to teachers or to students, about how to carry on the studying process, since the publication of the books referred to above. During the past year, however, five carefully prepared books and monographs have been published which supply teachers and pupils with effective helps in dealing with the study problem.

Dr. G. M. Whipple discusses the problem briefly and pointedly in a monograph[1] entitled *How to Study Effectively*. This monograph grew out of a request made by a group of high-school students for suggestions on the technique of studying. The suggestions appear in the form of thirty-eight rules, which are printed in heavy, black-face type to catch the reader's attention easily. Each rule is expressed in terms of direct advice and is followed by a few care-

[1] *How to Study Effectively.* By Guy M. Whipple. Bloomington, Illinois: Public School Publishing Co., 1916. Pp. 44.

fully selected illustrations or by a sufficient number of explanatory comments to make it intelligible and directly serviceable to students. The rules are summarized in brief form at the back of the monograph for the convenience of the user. The form and content of the suggestions are well illustrated by the following typical rules: "Do your work with the intent to learn and to remember"; "Have a clear notion of the aim"; "Give most time and attention to the weak points in your knowledge or technique"; "In all your work, apply your knowledge as much as possible and as soon as possible." Although the monograph was prepared primarily for the use of high-school students, it could be used with advantage by college students who wish to improve their study habits, or by elementary-school teachers who are attempting to develop right habits of study in their pupils.

Effective methods of studying are discussed at length by Dr. Harry D. Kitson in his book[1] entitled *How to Use Your Mind*. The book is characterized by its author as "a psychology of study, being a manual for the use of students and teachers in the administration of supervised study." The discussions are organized about the following carefully chosen topics: "Intellectual Problems of the College Freshman," "Note Taking," "Brain Action during Study," "Formation of Study Habits," "First Aids to Memory," "Concentration of Attention," "How We Reason," "Expression as an Aid in Learning," "The Plateau of Despond," "Mental Second Wind," "Examinations," and "Bodily Conditions for Effective Study." The materials used in discussing each of these topics have been secured from recent psychological and educational investigations and from the practical experiences of the author, who has made careful studies of college students for a number of years, with a view to finding out how they do their work and the methods of improving the results. It can hardly be said that the book is a manual of directions for the use of students. It is rather an illuminating discussion of the laws and principles underlying effective study. Although the volume has been prepared primarily for high-school and college students, its content may be used in the

[1] *How to Use Your Mind*. By Harry D. Kitson. Philadelphia: J. B. Lippincott Co., 1916. Pp. 216.

upper grades of the elementary school, if properly interpreted to pupils, or it may be used by elementary-school teachers who wish to secure the psychological background necessary for the intelligent direction of the study habits of grade pupils.

Adult discussion on the essentials of study are presented by G. V. N. Dearborn in a book[1] entitled *How to Learn Easily*. The author's purpose—namely, to supply teachers with practical hints on economical study—is admirable. The topics chosen as the basis for these discussions are the following: "Economy in Study," "Observations and the Taking of Notes," "Educational Imagination," "Books and Their Educational Use," "Is Your Thinker in Order?" and "Examination Preparedness." In connection with the discussion of many of these topics the author reviews the results of recent psychological and physiological investigations from which principles of procedure in study may be drawn. Although a large number of valuable suggestions are made, the book is open to the criticism that many of its discussions are too general to be of immediate practical value to the teacher or pupil. Some chapters, such as the one on "Educational Imagination," deal in an abstract way with the fundamental issues involved. To a considerable extent those phases of the book which deal with the more practical considerations leave the teacher without definite suggestions concerning methods of improving the study habits of pupils.

Some of the essentials of effective study are discussed briefly in the third section of H. H. Horne's book[2] entitled *Story-Telling, Questioning, and Studying*. The book as a whole is an outgrowth of a series of lectures which the author has addressed to teachers in various localities. As a result, the discussions deal more largely with practical suggestions than with the principles which underlie effective study habits. The following topics suggest the practical nature of the discussions: "Mechanical Aids to Study," "Physical Conditions of Study," "How to Study a Text," "Training Pupils to Study," "Influence of Good Teaching on Study," "The Five

[1] *How to Learn Easily*. By G. V. N. Dearborn. Boston: Little, Brown & Co., 1916. Pp. x+227.

[2] *Story-Telling, Questioning, and Studying*. By H. H. Horne. New York: Macmillan, 1916. Pp. 181.

Results of Study." The discussions are brief and well organized but somewhat general. If more detailed information had been included, an inexperienced teacher could have profited more directly from them.

*b*) *Supervised study.*—The problem of supervised study is intimately related to the problem of teaching pupils how to study effectively, and it has been emphasized more or less pointedly in each of the books and monographs referred to above. The methods and technique of supervised study are given major consideration in a book[1] entitled *Supervised Study*, by A. L. Hall-Quest. The book is characterized by its author as a discussion of the study lesson in high school and is intended to be of immediate practical value to teachers in supervising the study of pupils. The book is divided into three parts with the following headings: (1) general principles and methods, which discusses the present demand for supervised study, individual differences among pupils, the most effective conditions of, and hindrances to, study, the importance of supervised study, and effective methods of study; (2) special methods of supervising the study of various subjects, such as English, history, civics, mathematics, science, language, literature, and the fine and practical arts; (3) the effectiveness of supervised study as shown by measured results, and the improvement secured in various high schools where supervised study has been introduced. Throughout the book the author avoids theoretical discussions and deals for the most part with the conditions which are found in the ordinary classroom. The book is well written and should prove very helpful to high-school teachers and to teachers of the intermediate and upper grades of elementary schools.

*c*) *Questioning.*—Dr. Frank McMurry has given emphasis to the importance of questions in the classroom by stating that questions are prerequisite to all thinking, that they necessarily precede answers, and that they supply the motive for effort, as well as the basis for the selection and organization of data. The value of judicious questioning has been acknowledged for years, although very few texts have been devoted largely to the discussion of this

[1] *Supervised Study.* By A. L. Hall-Quest. New York: Macmillan, 1916. Pp. xvii+433.

problem. During the past year two contributions have been made to this field.

The first is a book[1] by J. C. and A. C. K. Hall entitled *The Question as a Factor in Teaching*. The major part of the book is taken up with the use of the question in teaching stories to children of the first five grades. The authors draw very pointedly the distinction between telling and teaching stories, and argue effectively that a considerable part of the time now given to story-telling should be used for the more stimulating exercise of teaching stories through the question form of treatment. This method of treatment is illustrated in detail in ten stories which are included in the book. These exercises are full of concrete suggestions which can be used directly in classroom work. The final section of the book makes application of effective questioning to various subjects, such as history, composition, manual training, reading, and arithmetic. The principle underlying effective teaching in all of these subjects is that material should be presented before a class in such a way as naturally to raise thought-provoking questions regarding the subject-matter which is being taught. The book may be classified as a handbook of practical suggestions concerning classroom instruction and should stimulate a great deal of productive thinking on the part of the elementary-school teacher.

"The Art of Questioning" is the title of the second part of H. H. Horne's book on *Story-Telling, Questioning, and Studying*, which was referred to earlier in this discussion. Horne presents a somewhat traditional discussion of the problem of questioning. Among the topics included are: "The Importance and Kinds of Questions," "The Manner of Questioning," "The Form and Content of Questions," "Prerequisites of a Good Questioner," and "The Treatment of Answers." Although a large number of helpful suggestions are offered, the author's discussion can hardly be said to be more than a detailed summary of a number of earlier treatments of the problem.

[1] *The Question as a Factor in Teaching*. By J. C. Hall and Alice Cynthia King Hall. Boston: Houghton Mifflin Co., 1916. Pp. viii+189.

*d*) *Motivation.*—This important problem is discussed at length by H. B. and G. M. Wilson in their book[1] entitled *The Motivation of School Work*. By motivation the authors mean "that attack upon school work which seeks to make its tasks significant and purposeful to each child by relating them to his childish experiences, problems, and desires." The book is divided into three parts. Part I deals with the need for motivation in modern education, its psychological basis, and the origin and sources of motives. Part II discusses the motivation of the fundamental subjects, such as reading, language, composition, history, geography, and arithmetic. Part III deals with the motivation of other school subjects and activities. These discussions are full of illustrations of the kinds of problems which the authors have found to be of interest to children. In this connection two criticisms suggest themselves with regard to the point of view taken by the authors. In the first place, many of the problems which are suggested may be interesting and concrete to adults, but may fail to interest children. In the second place, children have logical interests which are very real and concrete to them. Very little provision is made for these interests in the discussions. In connection with each school subject a large number of practical devices are included which may be of great value in stimulating activity in the classroom. The book is an outgrowth of a large school experience on the part of both authors. The discussions have been presented in terms which may be readily understood, and they should prove a distinct aid to elementary-school teachers.

The problem of motivation is attacked in much more general terms in a book[2] entitled *Reaching the Children*, by Henry C. Krebs. The author conceives the purpose of the school to be that of arousing the self-activity of the child and of guiding this activity into right channels. He outlines various agencies which may aid in this work, such as the teacher, the class recitation, the school library,

[1] *The Motivation of School Work*. By H. B. and G. M. Wilson. Boston: Houghton Mifflin Co., 1916. Pp. 265.

[2] *Reaching the Children*. By H. C. Krebs. New York: A. S. Barnes Co., 1916. Pp. vi+127.

the playground, self-government, private conversation, encouragement, talks by the teacher, fine sentiments, sympathy, direct moral instruction, companionship, ideals, instruction in health, removing false ideas, allegory, tact, and enthusiasm. Each of these agencies is discussed at length and, although they are quite general and idealistic in some cases, many helpful suggestions are included. The book might be read with greater profit by an experienced teacher who wishes to widen her vision of the possibilities of the classroom than by an inexperienced teacher who is in need of specific suggestions for supplying motive to the study of the ordinary school subjects.

*c*) *Problem-solving.*—The importance of developing ability to solve problems effectively in the classroom is discussed by W. H. S. Jones in a pamphlet[1] entitled *Scientific Method in Schools.* The author maintains that, before accurate reasoning becomes spontaneous and automatic, it must be regularly practiced, with conscious reference to the essential stages, and he pleads for a more rigid application of the principles of problem-solving to classroom exercises. The essential stages in problem-solving are developed in connection with the problem, What are the factors which determine the position of large cities? The steps outlined are those which are usually presented in formal discussions of reasoning, and they are open to the criticism that they represent the logical stages in reasoning rather than the actual steps employed by the ordinary thinker. The application of these principles to classroom work is illustrated in connection with a number of problems appropriate to pupils from twelve to seventeen years of age and chosen from a variety of high-school subjects. The discussions are very suggestive concerning the possibilities which the various subjects afford for problem-solving. The discussions are too brief, however, to give an inexperienced teacher very much assistance.

[1] *Scientific Method in Schools.* By W. H. S. Jones. Cambridge: University Press, 1916. Pp. 36.

## II. COMMENT ON CURRENT EDUCATIONAL PUBLICATIONS

1. *A new book on educational measurement.*—The writer of a text on educational measurement takes upon himself the responsibility of (1) selecting the best representative scales and standard tests to put before teachers, (2) evaluating these carefully, (3) presenting them in non-technical language, (4) showing *how they can be and are being used* to set standards of attainment and *to improve teaching in a very definite way*, and (5) supplying the teacher with a completely organized and well-annotated bibliography of tests and scales that are now available.

*The Scientific Measurement of Class Room Products*,[1] by J. Crosby Chapman and Grace Preyer Rush, is deficient on nearly every one of these counts. First, it may be questioned whether the most representative scales or tests for each of the different subjects of study have been selected for publication. In the chapter on reading, for example, it reprints the Gray "tentative scale for Oral Reading," which has been discarded by the designer, and for which has been substituted a well-standardized test with which more than 50,000 children have been tested. This final standardized scale has been available for more than two years. Again, the book reprints the Starch reading tests and the early (1914) Courtis reading tests, neither of which has had wide usage, and the latter of which has been discarded by the designer himself. No mention is made of Brown's reading tests, which, although open to criticism on several counts, may be used to help the teaching of reading in a very definite way. In this chapter, as in the others, the writers seem to be more interested in the use of tests to establish norms of attainment than they are in the use of tests to improve the teaching of specific subjects of study. Again, the non-critical attitude displayed in selecting the tests is shown by the inclusion of Starch's spelling lists (lists which determine a pupil's ability to spell words selected at random from the entire English language!); the Thorndike drawing scale; and the Courtis writing tests, which present merely a description of a method of collecting writing samples.

[1] Published by Silver, Burdett & Co., Boston, 1917. Pp. iv+191.

No mention is made, for example, of the St. Louis handwriting scale (Johnson and Stone) or of the analytical scales designed by Freeman.

Secondly, throughout the book there is almost no evaluation of the tests themselves. Thus the book is not only unsatisfactory in its selection of material, but likewise in the brief discussion that is offered concerning the value of the tests themselves.

Thirdly, the authors are to be commended for the presentation of the tests in non-technical language. Not enough explanatory material is given, however, concerning the derivation of the tests to make clear the use of them to teachers.

Fourthly, the book *does* show how the tests can be used to establish standards of attainment in certain of the subjects of study in the elementary school. In its quotation of standards which have already been set up, however, it is out of date, norms being quoted as acceptable which have been discarded by the investigator himself in a particular field, or which have been superseded by many others more recent in publication. The most outstanding defect, however, in this book which purports to tell teachers about standard tests and how to use them is that it makes almost no contribution to the teacher's knowledge of *how to use tests to improve her own teaching*. It should be clearly recognized at this stage of the measuring movement that the aim of establishing norms and standards of improvement through the use of the standard tests is a subordinate aim. The primary function of scales and standardized tests in publication should be that of diagnosis—the determination of defects in learning and of the best ways of improving the teaching of the various subjects of study.

On the fifth count the book is again deficient. Instead of supplying the reader with a completely organized and well-annotated bibliography, the authors of this book repeat in their bibliography the thirteen references already discussed in the book and name but three other references for further reading.

The book contains 191 pages; of these, 81 pages are devoted to the reprinting of the scales and tests themselves and 20 pages to reprinting the directions for using them. In the chapter on handwriting 20 of the 32 pages are devoted to reprinting the Thorndike and the Ayres scales. These scales are already available in hun-

dreds of school systems in the United States. They have been printed and reprinted and placed before teachers very generally. There can be little excuse for reprinting this kind of material. The same is true of the chapter on reading. Of the 44 pages, 24 are devoted to reprinting the Thorndike scales, the preliminary Gray scale, the Starch tests, and the Courtis test.

To sum up, a teacher reading this book, therefore, can get a cross-sectional view of a very small portion of the literature on educational measurement. She will have at hand a few of the tests, but not always the best ones. She will be given directions for using these particular tests and will be able to compare the results of giving them to her classes with a few standards of attainment, most of which are out of date and have been supplanted by more complete and recent ones. She probably will be led to believe that tests are designed primarily in order that administrators may set standards of attainment. She will not be told directly how to follow up the use of tests in improving her own teaching practice. Finally, her future reading in this field will not be directed by an organized and selected bibliography. Because of all these deficiencies, we do not commend this publication as a representative discussion in the field of educational measurement.

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2. *A new monograph on the psychology of reading.*—From the experimental laboratory of the School of Education of the University of Chicago, three investigations in the psychology and testing of reading are being reported. The first, Mr. W. S. Gray's *Studies of Elementary-School Reading through Standardized Tests*, was reviewed in the April number of this *Journal*. The second, Mr. Schmidt's *An Experimental Study in the Psychology of Reading*,[1] has just appeared. It is a technical monograph which reports a carefully worked out laboratory study of the factors that contribute to efficiency in oral or silent reading. As the writer points out:

> Before the advantageous and economic reconstruction of practice [in the teaching of reading in the public schools] can be effected, additional information

[1] *An Experimental Study in the Psychology of Reading* (No. 2 of the Supplementary Educational Monographs). By William Anton Schmidt. Chicago: The University of Chicago Press, 1917. Pp. iv+126. $1.00.

is needed. To this end the reading process must be further analyzed and the boundaries of the psychology of reading must be materially extended. It is not sufficient, for instance, to know that reading rate is a variable. We must determine the factors which condition such variation; we must find out to what extent speed efficiency is dependent upon the number, and to what extent upon the duration, of fixation pauses; how it is related to age and accomplishment and how to efficiency in comprehension; to what extent it is subject to improvement under judicious practice; and within what limits it may be developed in connection with continuous reading rather than scanning. It is essential further that the difference between silent and oral reading be carefully pointed out, and that the possibilities and limitations of each be more completely set forth.

In chap. ii the writer gives a very helpful *historical sketch* of three types of experimental investigation—namely, (*a*) those approaching the problem primarily through a study of eye-movements, (*b*) those dealing chiefly with the perceptual process, and (*c*) those attacking the problem from the standpoint of individual differences in speed, comprehension, and reproduction. To do this he summarizes: the evolution of the experimental technique for the study of eye-movements, and the result of experimentation with eye-movements, stressing especially the work done on the fixation pause; the tachistoscopic experimentation studies which deal chiefly with the perceptual process; and, finally, the studies chiefly concerned with individual differences in speed and comprehension of reading.

Chapters iii–vi give the results of Mr. Schmidt's own investigation covering a careful analysis of the reading process. The method consists chiefly in a critical study of the eye-movements underlying the mechanics of reading. As the perceptual process is largely restricted to the fixation pause, the latter was the principal object of intensive investigation. The apparatus used in the study was the Dodge photographic apparatus—with some new departures—by which a photograph is obtained of the eye-movement through the reflection of a beam of light from the cornea of the eye.

The study of the mechanics of reading was accompanied by an analysis of the degree to which the subjects comprehended what they read. The question and answer method was used to determine comprehension instead of the commonly used reproduction method,

the writer quite properly showing that "efficient comprehension in reading implies anything but total redintegration or indiscriminate reproduction."

Mr. Schmidt's study is distinctive in that he has provided for (1) uniformity in such factors as the complexity of the material, length of line, size of type, etc., and (2) for three *large* groups of male subjects, *83 in all*—45 adults of collegiate rank, 17 high-school pupils, and 21 grade pupils—the school pupils coming from all grades, II–XII inclusive.

The writer has made a definite contribution through the conclusions of his study. Comparing groups of varying age and mental accomplishment, he finds practically no difference between the groups in number of pauses, duration of pauses, location of pauses, and average fixation or "reading" time. The only real marked difference between the groups appears in connection with irregularities, refixations and variation being much more prominent in the case of children than of adults. He points out an important critical transition stage which marks the passage from the slow reader to a rapid adult type of reader, and which comes with his subjects in the second and third grades. With the mechanics of reading mastered, the rate tends to become relatively constant. Thus efficiency in speed of reading may be attained at a comparatively early age. We quote one of his more significant statements:

> There is ample evidence that a large percentage of readers, particularly those who are not good visualizers, is compelled to resort to "scanning" in order to attain final efficiency in the speed of silent reading. This fact, although almost entirely ignored, thus far is bound to be of material significance in determining the reorganization of practices and methods of teaching reading, particularly if it can be shown that scanning is not opposed to good quality in comprehension.

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3. *An important book in the field of industrial history.*—A book on *Household Manufactures in the United States, 1640–1860*,[1] has just appeared which should be a very helpful addition to the teaching of history courses in elementary, secondary, and higher

[1] *Household Manufactures in the United States, 1640–1860. A Study in Industrial History.* By R. M. Tryon. Chicago: The University of Chicago Press, 1917. Pp. x+413.

schools. Especially will it contribute to the teaching of household arts in both lower and higher schools. The present demand for material in the history of the industries for inclusion in public-school history courses will be partially satisfied by Mr. Tryon's book. To teachers of household arts, especially of textiles, it should make a very definite and detailed contribution in the account which it supplies of one phase of their work as it was done in the home prior to the time of its taking over by the school.

The general plan of treatment involves a combination of the chronological and topical methods:

> The colonial period has been covered four times, twice rather intensively and chronologically and twice less intensively and with little regard to chronology. Each of the four times the field has been covered with a very definite aim in view: the first, to determine and elucidate the various factors affecting household manufactures; the second, to connect these factors with real situations; the third, to consider the multifarious products of the family factory; and the fourth, to find evidences of the transfer from family- to shop- and factory-made goods. The period from 1783 to 1810 has been treated chronologically with a view to showing influencing factors and amounts made, and topically for the purposes mentioned in three and four above. After 1810 the discussion has largely to do with the transition from home- to factory-made goods, and adapts itself admirably to a straightforward chronological treatment.

The book has been written by a historian and connects, throughout, the subject of household manufactures with the general economic and political history of the nation. It reveals the importance of household manufactures as the dominant element in the industrial life of the country that for a long time was the one factor in sustaining an almost economic independence of other nations. Its material has been collected with painstaking care covering several years of research, and is presented in a form equally as carefully designed. It is a welcome change from the general run of hastily planned and hastily written educational books which have come to this desk.

To provide an adequate setting for the story of household manufactures in chap. ii the writer shows the way in which England's colonial policy, the colonies' policy of encouragement, and the economic and political conditions, generally, contributed to

the development of the industry during the colonial period. Then in chap. iii he makes a statement of the general status of household manufactures in the colonies. The seventeenth-century beginnings are taken up, and progress after 1700 is shown. Chapter iv shows how the first few years following the Treaty of Paris saw a sharp decline in the interest of the people in goods of their own manufacture; how, as soon as they realized the full effects of their "madness for foreign finery," they returned to their former simplicity and economy and life necessity; how, as a result of their experience during the hard times following the establishment of their political independence, the people began to see the need of industrial independence as well; and how, to establish this much-desired condition, great reliance was placed in the system of household manufacturing.

Chapter v gives the details concerning a year's output of the family factory, and in chap. vi the products of the family factory are discussed under the following main divisions: (1) wearing apparel and household textile supplies; (2) household implements, utensils, furniture, necessities, and comforts; (3) farming implements, building materials, and general supplies. The book closes in chaps. vii and viii with a discussion of the transition from family- to shop- and factory-made goods and with the story of the passing of the family factory illustrated by the detailed account of what took place in one state.

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4. *A book on school attendance.*—To use the current terminology of the educational profession, the recently published book by Abbott and Breckinridge[1] is an exhaustive survey of the Chicago school situation as regards attendance and non-attendance.[2] It is by far the most extensive study of the kind that has yet been made for any American city.

[1] *Truancy and Non-Attendance in the Chicago Schools: A Study of the Social Aspects of the Compulsory-Education and Child-Labor Legislation of Illinois.* By Edith Abbott, Ph.D., and Sophonisba P. Breckinridge, Ph.D. Chicago: The University of Chicago Press, 1917. Pp. xvii+472.

[2] This review was contributed by Dr. J. F. Bobbitt, of the Department of Education of the University of Chicago.

The first few chapters present the history of compulsory-attendance and child-labor legislation in Illinois from the date of the admission of the state, in 1818, down to the present. This history shows that Illinois in common with most other states was very slow to adopt the principle of compulsory attendance; and that, after it was adopted, the local educational authorities of the various cities, towns, and counties—Chicago among the rest—were sufficiently reluctant in enforcing its provisions. This enforcement has always been, and is now, left to the local educational authorities. The authors believe that the development would have been much more rapid had there been centralized leadership within the state; and they raise the question whether some state educational authority should not be created for the purpose of supervising the work of the local authorities in the enforcement of the state attendance laws.

The major portion of the book treats the situation as it exists at present in Chicago. There is discussion of the extent of truancy and non-attendance in the city; the transfer system as a factor in non-attendance; the various causes of truancy and non-attendance; the relation of mental and physical defects to truancy and non-attendance; the school census as a means of enforcing the attendance laws; the assistance that may be afforded by the visiting teacher; the special problem of the immigrant child; special schools for taking care of the truants and wayward children; the need of finding remedies that strike at the causes of the troubles; a mode of managing the employment certificate system so as to safeguard children during the attendance period; the need of compulsory education for children between fourteen and sixteen years of age.

As are most educational surveys, the study is made for the practical purpose of initiating further improvements. On the basis of the facts presented the authors in the concluding chapter make a number of carefully formulated recommendations, which, if acted upon, would result in very large progress toward the adequate solution of the many problems outlined. These recommendations relate to the establishment of state supervisory machinery for the purpose of securing more adequate enforcement of school laws; the raising of the compulsory-attendance age from

fourteen to sixteen; a different placement of the responsibilities for issuing working papers; the setting up of higher standards, both physical and intellectual, for working papers; a provision for continuation schools for those of deficient education who have passed the compulsory-attendance period; special provision for adolescent immigrants and illiterate minors; the development of an effective system of child accounting; readjustment and further development of the vocational-supervision bureau; and a number of others.

The recommendations are reasonable and conservative. They are not intended to include all desirable changes. They present only those which appear to be practicable at the present time.

The authors are practical social workers, who have had long and intimate contact with the social conditions of Chicago. The book is therefore written from the social worker's sympathetic point of view rather than from the frequently more circumscribed, and usually somewhat different, point of view of the professional school man. It is a model of rigorous scientific study of the questions involved that ought to be of large suggestiveness to other cities in their making of similar studies.

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5. A book has appeared[1] which represents an important tendency in modern education—namely, that of adapting the materials in the social sciences to the local interests and needs of the pupils. As the subtitle suggests, the aim of the author is to furnish a body of interesting and valuable supplementary reading material for the upper elementary grades. The facts are drawn from geology, nature, history, industry, biography, literature, legend, and humor, and are selected with the idea of entertaining and instructing the reader.

The general plan of treatment is first to devote a few chapters to New England as a whole and then to treat each of the six states separately. In dealing with each state the plan is to devote a chapter or two to historical beginnings and the remainder to industries, natural scenery, and famous people and places. There

[1] *New England, A Human Interest Geographical Reader.* By Clifton Johnson. New York: Macmillan, 1917. $0.75.

are about two hundred well-selected illustrations which add local color and interest.

Outside of New England the book will be of little practical value as a supplementary reader. If such material is used in school, it should treat of the community in which it is studied. The great value of Mr. Johnson's book to communities outside of New England is to indicate the types of local material which can be utilized in a study of one's near or immediate locality.

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## III. CURRENT EDUCATIONAL PUBLICATIONS RECEIVED

(Detailed discussions of some of the following books will appear later.)

### GENERAL EDUCATIONAL THEORY AND PRACTICE

BRONNER, AUGUSTA F. *The Psychology of Special Abilities and Disabilities.* Boston: Little, Brown & Co., 1917. Cloth. Crown 8vo, pp. vi+269. $1.75.

Education and vocation from the point of view of adequate adjustment of the individual.

DAVIS, CALVIN O. *Public Secondary Education.* Chicago: Rand McNally & Co., 1917. Cloth. Pp. xiv+270.

FULD, FELIX. *Service Instruction of American Corporations.* Department of the Interior, Bureau of Education, Bulletin No. 34, 1916. Washington: Government Printing Office, 1917. Pp. 73.

LEAVITT, FRANK M., and BROWN, EDITH. *Elementary Social Science.* New York: Macmillan, 1917. Cloth. Crown 8vo, pp. 137. $0.80.

LEE, ROGER I., M.D. *Health and Disease—Their Determining Factors.* Boston: Little, Brown & Co., 1917. Cloth. Pp. 378. $1.75 net.

Presents in non-technical language the facts to which medical science can truthfully assent without exaggeration.

PATRI, ANGELO. *A Schoolmaster of the Great City.* New York: Macmillan, 1917. Cloth. Pp. 221.

The newer life in educational method and practice, shorn of didactic technicalities.

SCHOFIELD, LOUISE. *Kindergarten Legislation.* Department of the Interior, Bureau of Education, Bulletin No. 45, 1916. Washington: Government Printing Office, 1917. Pp. 30.

SCHROEDER, H. H. *Cost of Public Education, 1915–1916. Peoria, Illinois.* A report to the Board of School Inspectors of Peoria. Paper. Pp. iii+54.

*Syllabus for Secondary Schools, 1910.* Albany: University of the State of New York, 1917. Separate Pamphlets: *Drawing, English, Mathematics, Ancient Languages.*

WINSLOW, CHARLES-EDWARD AMORY. *Healthy Living. The Body and How to Keep It Well.* New York: Charles E. Merrill Co., 1917. Cloth. Illustrated. Pp. 385.

## TEXTS AND SUPPLEMENTARY BOOKS

### I. FOR THE ELEMENTARY SCHOOL

BAILEY, CAROLYN S. *The Way of the Gate.* In collaboration with E. HERSHEY SNEATH, GEORGE HODGES, and HENRY HALLAM TWEEDY. New York: Macmillan, 1917. Cloth. Pp. xviii+216. $0.65.

This is one of "The King's Highway Series" of eight readers containing a graded system of moral and religious training for home and school. The material included is based on the opinions of the grade teachers of ten cities.

FROELICHER, FRANCIS M. *Swiss Stories and Legends.* New York: Macmillan, 1917. Cloth. 16mo, pp. vi+147. $0.40.

GEHRS, JOHN H. *Productive Agriculture.* New York: Macmillan, 1917. Cloth. Illustrated. Pp. xii+436. $1.00.

An attempt to present standardized material suitable for upper elementary and high-school grades of the North Central states.

JAMES, HARLEAN. *The Building of Cities.* New York: Macmillan, 1917. Cloth. 12mo, pp. xiii+201. $0.40.

Problems of the city made interesting for the boys and girls of any city.

STRASBURGER, AMELIA, and CHANKIN, JOSEPH. *Systematic Drill in Arithmetic Fundamentals.* Book I. Addition, Subtraction. Chicago: Longmans, 1917. Cloth. 12mo, pp. v+122. $0.35.

An adequate and systematic arrangement of material for purposes of drill.

### II. FOR THE HIGH SCHOOL

ASHLEY, ROSCOE LEWIS. *The New Civics, a Text-Book for Secondary Schools.* New York: Macmillan, 1917. Cloth. Crown 8vo, pp. xxviii+420. $1.25.

BAMBURGH, WILLIAM C. *Talks on Business Correspondence.* Boston: Little, Brown & Co., 1916. Cloth. Pp. xv+246. $1.00.

An aggregation of suggestions, principles, rules, and plans compiled with commercial authority, based upon a wide experience in handling the correspondence of large firms and corporations.

BRINKWORTH, MARY G. *A Business Speller.* Boston: Ginn & Co., 1917. Cloth. Pp. iv+76. $0.25.

DOOLEY, WILLIAM H. *Vocational Mathematics for Girls.* Boston: D. C. Heath & Co., 1917. Cloth. 12mo, pp. vi+369.

Practical applications in mathematics suited to the needs of girls who will enter the work-a-day world from the secondary school.

HARRISON, E. S. *An Intermediate Spanish Reader.* With notes, exercises, and vocabulary. Boston: Ginn & Co., 1917. Cloth. 16mo, pp. 234. $0.72.

JENSEN, GERARD E. *Boswell's Life of Johnson* (abridged) with notes and an introduction. Boston: Houghton Mifflin Co.; Cambridge: Riverside Press, 1917. Cloth. Pp. xiv+228. $0.44.

MERINGTON, MARGUERITE. *Holiday Plays.* Five one-act pieces for Washington's Birthday, Lincoln's Birthday, Memorial Day, Fourth of July, and Thanksgiving. New York: Duffield & Co., 1917. Cloth. 12mo, pp. 164. $1.50.

SMITH, L. J. *Essentials in Mechanical Drawing.* New York: Macmillan, 1917. Cloth. Illustrated. 12mo, pp. vi+57. $0.50.

WARSHAW, J. *Spanish-American Composition Book.* New York: Henry Holt & Co., 1917. Cloth. Pp. vii+156.

Based on subjects in which Latin-Americans naturally take pride with a view to developing both the language and a sympathetic estimate of the South American people.

WELLMAN, MABEL THACHER. *Food Study. A Textbook in Home Economics for High Schools.* Boston: Little, Brown & Co., 1917. Cloth. Pp. xxi+324. $1.00.

WHEELER, ALBERT H. *Examples in Algebra, A Collection of Exercises to Accompany Any Textbook.* Boston: Little, Brown & Co., 1916. Cloth. Pp. xiii+257. $0.90.

### III. FOR THE COLLEGE

HELLER, OTTO. *In St. Jurgen von Theodor Storm.* New York: Henry Holt & Co., 1917. Cloth. Pp. xviii+147.

KELLEY, JAMES P. *Workmanship in Words.* Boston: Little, Brown & Co., 1917. Cloth. Pp. viii+333. $1.00.

LONG, WILLIAM J. *Outlines of English and American Literature.* An introduction to the chief writers of England and America, to the books they wrote, and to the times in which they lived. Boston: Ginn & Co., 1917. Illustrated. Crown 8vo, pp. xvii+557. $1.40.

MCLOUTH, LAWRENCE A., and RICHTER, KURT E. *L'Arrabbiata.* Novelle von Paul Heyse. New York: Henry Holt & Co., 1917. Cloth. Pp. xii+105.

Open Court Publishing Co., Chicago, 1917. *The Complaint of Peace.* Translated from the *Querela Pacis* (A.D. 1521) of Erasmus. Cloth. 12mo, pp. 80. $0.50.

RANKIN, THOMAS E. *The Method and Practice of Exposition.* New York: Macmillan, 1917. Cloth. 12mo, pp. 278. $1.40.

Not intended to replace, but rather to supplement, standard works.